elise

European Network of AI Excellence Centres

Research & Industry Nodes for Artificial Intelligence in Europe

Catalogue 2024

Local AI Opportunities for
Students, Scientists and Enterprises

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 951847. ELISE works in close collaboration with the ELLIS Society (European Laboratory for Learning and Intelligent Systems).

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Development Team

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COMMUNICATIONS
Maarit LIIMATTA

SPINVERSE

Spinverse is a partner in the ELISE project and developed this catalogue to bring AI research and industry together.

Spinverse is the Nordic leader in innovation consulting, helping customers grow and solve global challenges with innovations. The company's experts are committed to support customers to secure public funding, find partners for collaboration, and make an impact with ground-breaking projects.

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European Network of AI Excellence Centres

Enhanced academia and industry collaboration in Europe

Coordinated by Aalto University, Finland with 23 partners from 11 European countries

- 14 AOs
- 1 RTO
- 6 SMEs
- 2 LEs

Objectives

Increase Europe's competitiveness in ML and AI by:

- Building a network of excellence
- Strengthening technical capabilities
- Improving performance in deployment
- Aligning with social interest
- Improving research collaborations and by
- Engagement of industry and society

Activities that bring research and industry closer:

- Event participation, Interviews, RTOs booklet, Statistics, Newsletters

Contact information and Social media:

www.elise-ai.eu
www.ellis.eu

@ai_elise

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 951847. Elise works on top of **ELLIS Society** (European Laboratory for Learning and Intelligent Systems) which was originally founded to advance research breakthroughs in AI in Europe.

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Methodology

Research nodes, in color  . ***Criteria***: (1) the node belongs to academia (incl. research institutes); (2) the term "AI" is included in the name of the node (this criterion helped us to limit the number of entries); and (3) the node has a website with enough information, e.g., contact, topics, team, publications, projects, etc. ***Search***: We used Google for the search. We used the following search terms: (1) search by country. For all member states and associated countries, we used "site:xx", e.g., "es" for Spain; (2) search by topic in title. We used "allintitle: AI" and "allintitle: "artificial intelligence""; and (3) search by type of node in title. We added the following terms (one at the time), "team", "group", "laboratory", "centre", "center", "department", "institute", etc. ***Success rate***: The previous raw search produced a list of 1000+ AI nodes. We removed the AI nodes which failed the third criterion, producing a list of around 600 AI nodes. We run a pilot with around 20 AI nodes. We invited the 600 AI nodes and received positive responses from around 150 nodes. From those 150 nodes, we received near 100 forms. These are presented in the following catalogue. ***Data collection period***: Data was updated from January to June 2024.

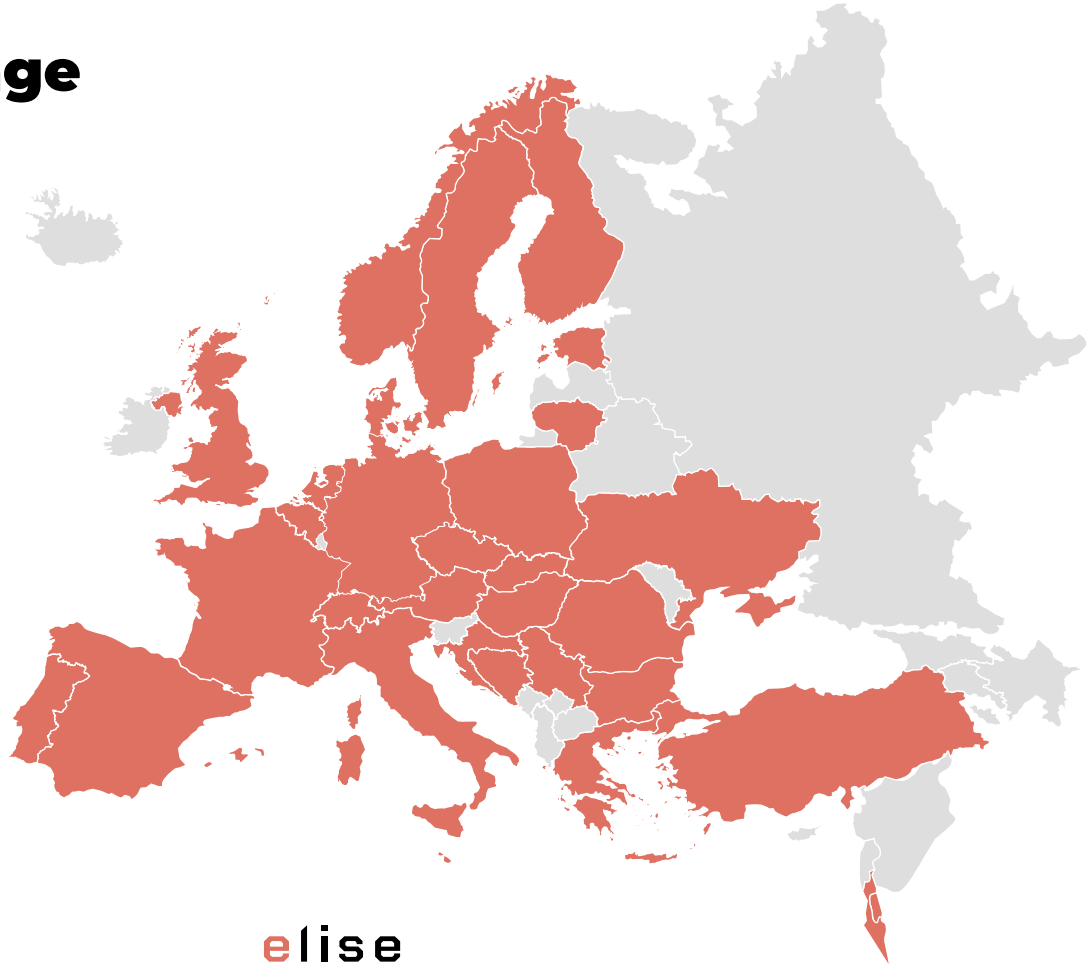
Industry nodes, in color  . Companies of various sizes were invited based on their presence in European projects, or their products or services (which were related to AI technologies). ***Data collection period***: Data was collected and processed from January to July 2024.

ELLIS nodes, in color  . All ELLIS units were included. ***Data collection period***: Data was collected from the ELLIS' website and processed from January to June 2024.

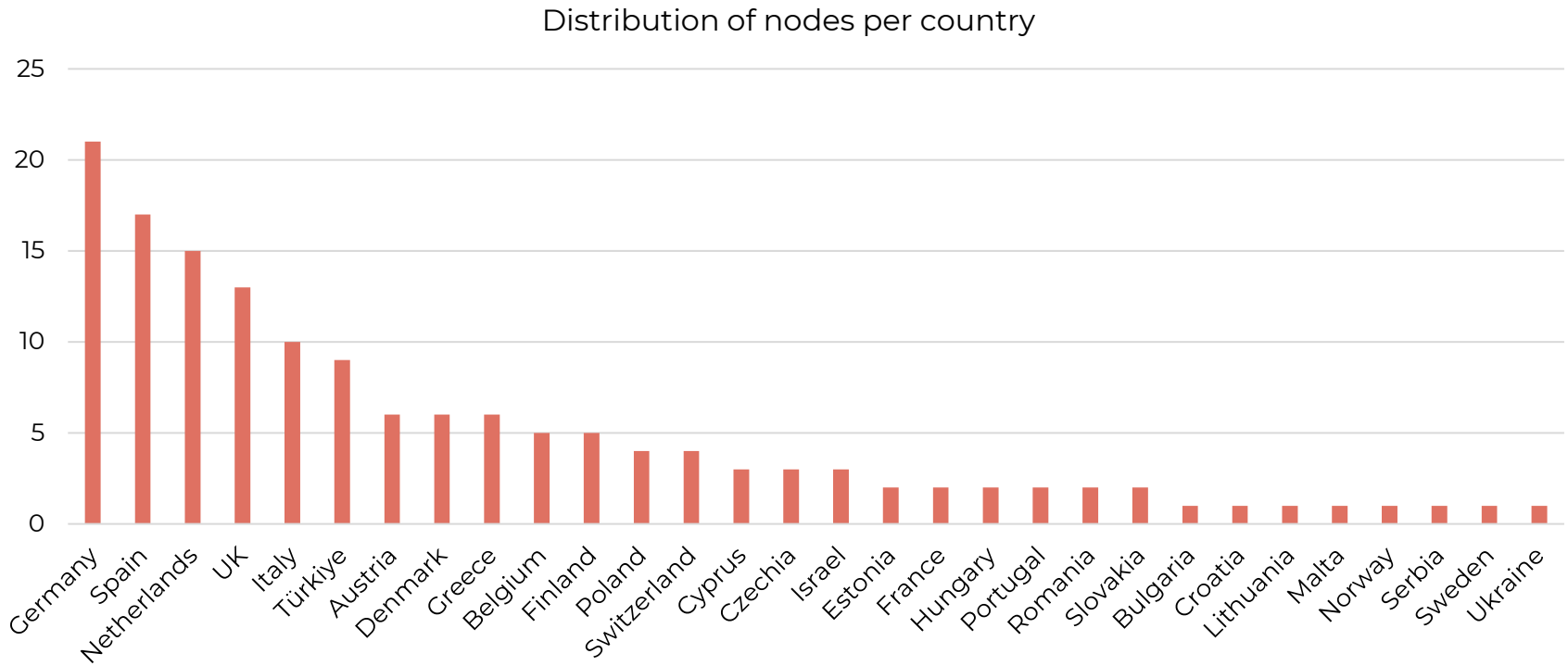
Country coverage

150
AI nodes

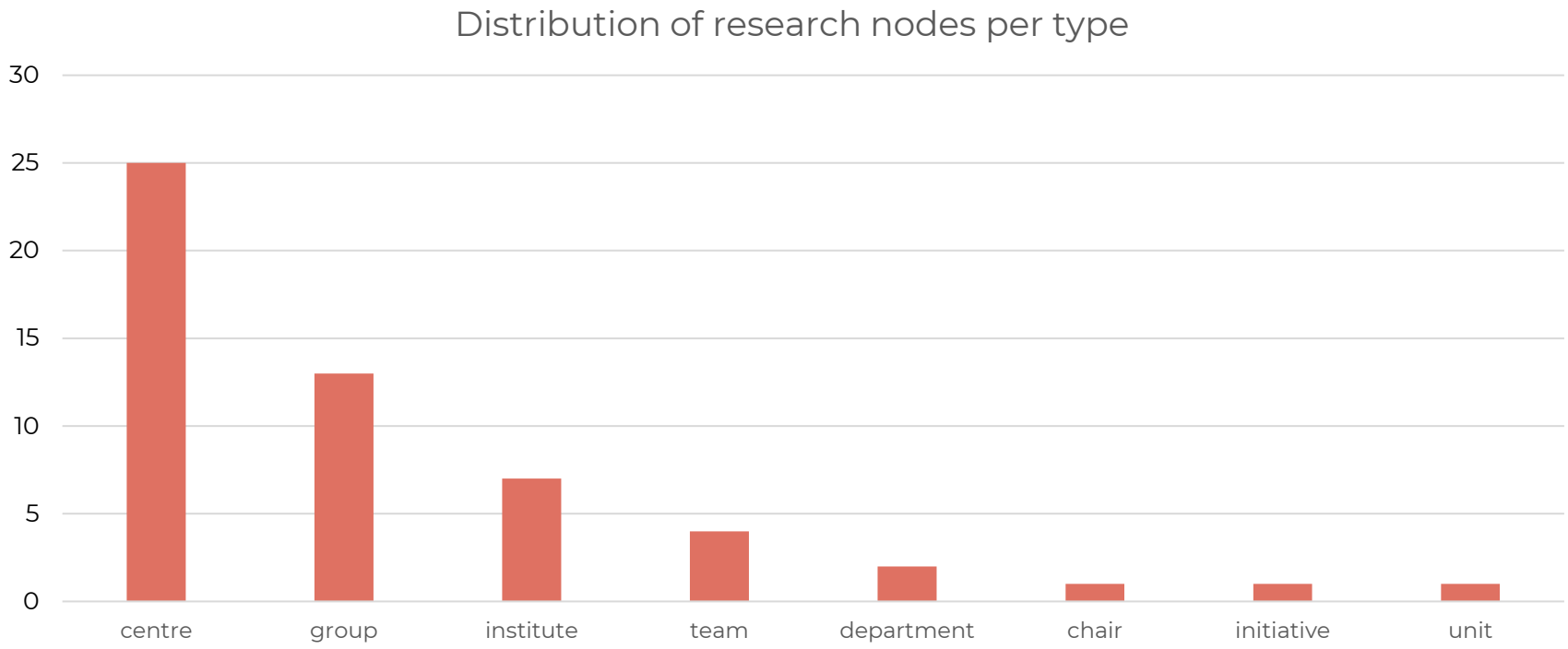
30
countries



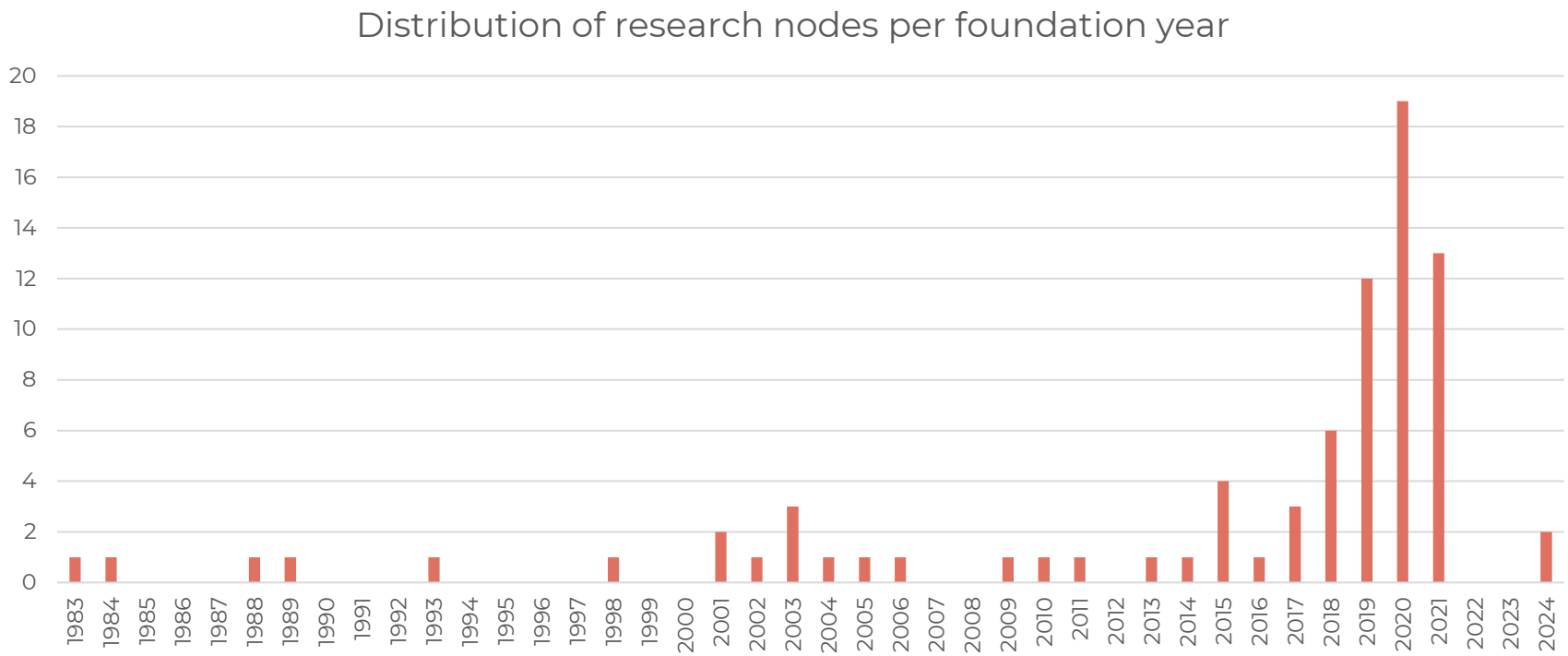
Statistics, nodes per country



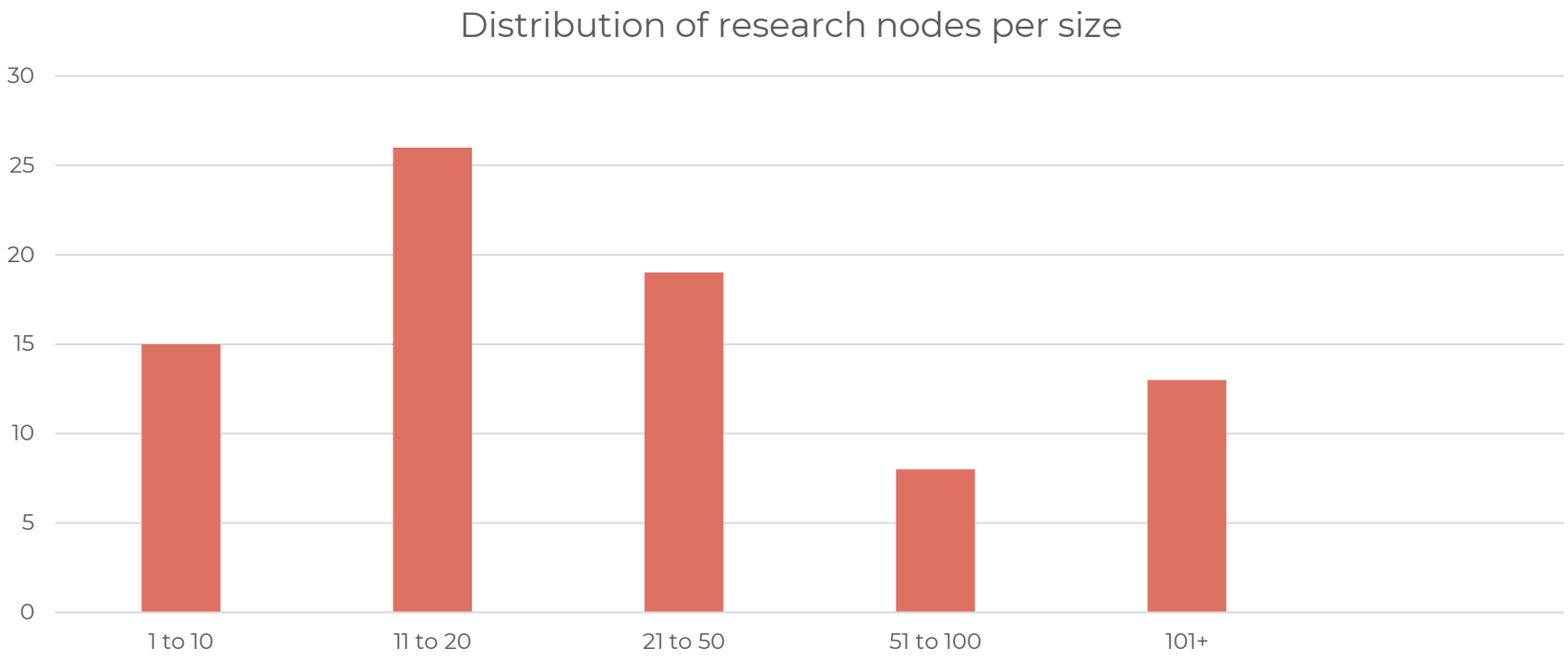
Statistics, research nodes per type



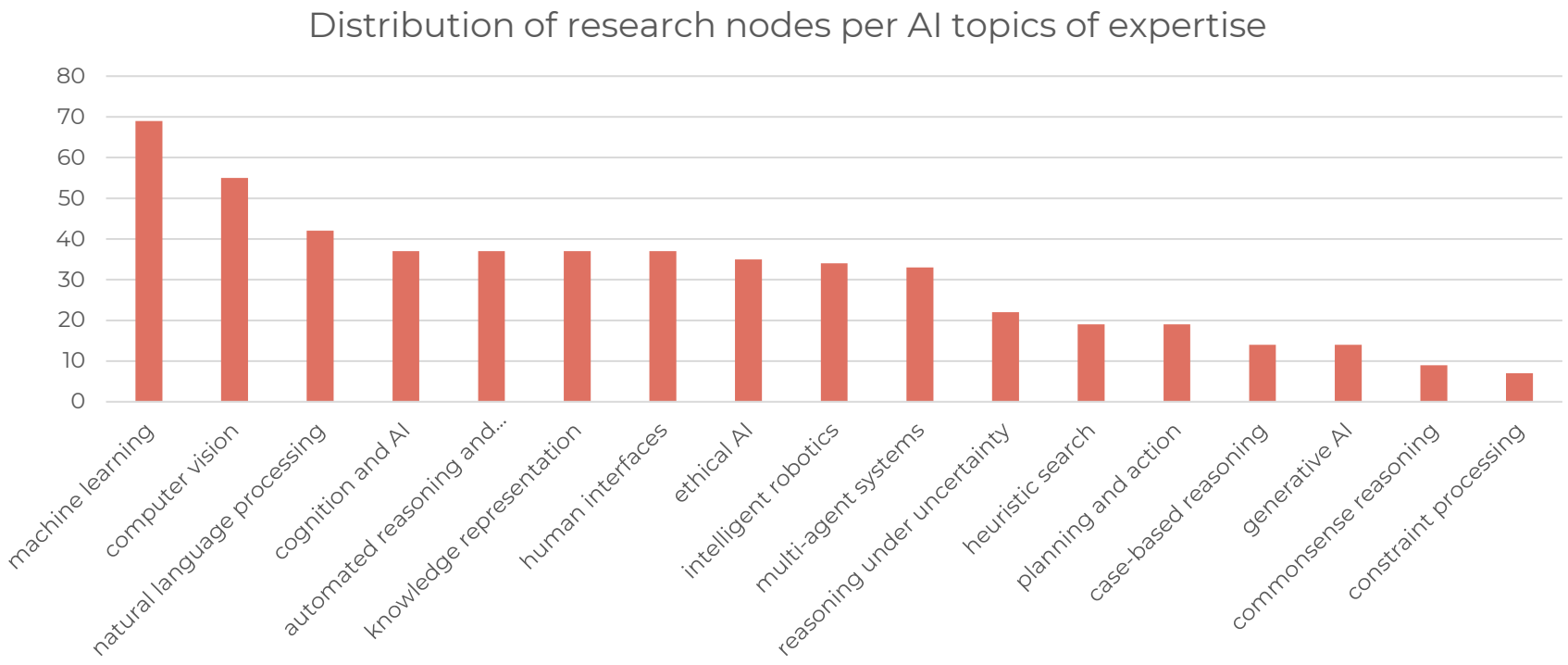
Statistics, research nodes per foundation year



Statistics, research nodes per size



Statistics, research nodes per AI topics of expertise



FIT4BA Big Data Analytics and Artificial Intelligence Research Center FH | JOANNEUM

Research node:
Big Data and Artificial Intelligence Research Centre

Directors:
Prof. Wilhelm Zugaj
Prof. Erwin Zinser

Year of establishment:
2018

Number of researchers:
11-20

Parent organizations:
FH JOANNEUM
University of Applied Sciences

Contact information:

Topics of expertise

computer vision, heuristic search, machine learning

Selected publications, peer-reviewed

- U. Pferschy, J. Schauer, C. Thielen, "Approximating the product knapsack problem", Optimization Letters, 2021
- N. Chiarelli, et al., "Fair packing of independent sets", International Workshop on Combinatorial Algorithms, 2020
- M. Ehrnhöfer-Reßler, E. Zinser, "Development of a multi-dimensional screening model to investigate the metabolic effects of extractables and leachables from packaging materials", Extractables & Leachables, 2016
- W. Zugaj, et al. "Ensuring data quality with hibernate and JSR 303", International Scientific Conference Proceedings Gabrovo, 2013
- W. Zugaj, A. S. Beichler, "Towards a NoSQL security map", Information Systems Development: Designing Digitalization, 2018

Selected projects, funded by the European Commission or national agencies

- FIT4BA-FFG, COIN Aufbau (grant no. 3014958), 2018-2023
- Zukunftsfonds Steiermark-Zukunftsfonds Steiermark-Land Steiermark, Next Green Tech (grant no. PN1408), 2022-2023
- Green Big Data, FFG (Innovationslehrgänge), 2018-2021

Related study programmes, doctoral or master levels

- IT & Mobile Security, FH JOANNEUM
- Data Science and Artificial Intelligence, FH JOANNEUM


FH JOANNEUM

CISC

Industry node:

BU Wireless Identification

BU Internet of Energy

Director:

Dr. Ralph Weissnegger

Company:

CISC Semiconductor GmbH

Year of establishment:

1999

Number of employees:

25-50

Office locations in Europe

Klagenfurt, Austria; Graz, Austria; Brno, Czech; also, Mountain View, US

Contact information:



Sectors of expertise:

design, energy, hardware and networking, manufacturing, software and IT services, transportation and logistics, corporate services

Selected services or products (AI-powered or enabling AI):

- **Internet of Energy :** Security and reliability of distributed virtual powerplants. Based on more than 20 years of experience, CISC has integrated multiple and newest enabling technologies to final products as communication devices and platforms to build scalable applications and services. We enable our customers to generate a significant potential impact on their domain specific application feasibility and the sustainability of the underlying business model.
- **COYERO:** COYERO enables secure and easy access to local infrastructure and mobility services, products, venues, and more. By integrating COYERO into existing local apps or using the COYERO White-Label App any platform operator is able to connect local service providers, merchants, event and leisure facilities, mobility services, and more.
- **Predictive Maintenance-**EU introduced measures to reduce (e-)waste and presented a digital product passport which makes the origin of the product and their supply chain information transparent to industry and end-users. The aim of the project is to support sustainable production of green RFID/NFC by using AI-enhanced quality assurance testing and predictive maintenance to optimize the efficiency and resources on new generation sustainable label producing machines as well to reduce energy consumption.

Selected projects, EC or nationally-funded:

- AgrarSense "Smart, digitalized components and systems for data-based Agriculture and Forestry", Chips Joint Undertaking (grant no. 101095835), 2023-2025
- Energy ECS "Smart and secure energy solutions for future mobility", Chips Joint Undertaking (grant no. 1010072247), 2021-2024
- AIMS5.0 "Artificial Intelligence in Manufacturing leading to Sustainability and Industry5.0", Chips Joint Undertaking (grant no. 101112089), 2023-2026

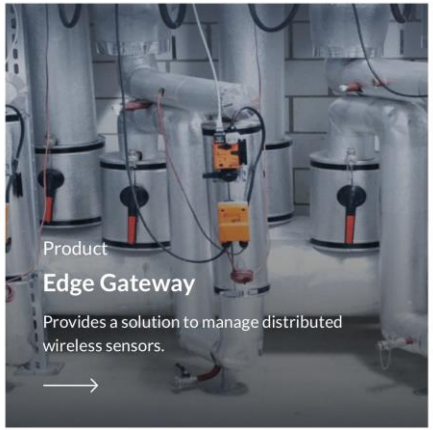
Topics of interest:

human interfaces, intelligent robotics, knowledge representation, machine learning,


Product
RAIN RFID Xplorer
All-In-One High-Precision RFID Test Instrument.


Product
NFC Xplorer
Compact, high-quality test system, developed for NFC and HF device measurements.


CISC
Product
NFC Interoperability Testing
Turnkey solution for interoperability tests of NFC-enabled devices with focus on contactles…


Product
Edge Gateway
Provides a solution to manage distributed wireless sensors.


Product
E2E Security Connector
Cloud solution for enhancing the security level of your system.


Product
IoT Device Management Platform
Analyze Performance, Discover Usage Patterns, Avoid Cost and Time-Consuming Maintenance…

Industry node:

AI & ML-Team, at Innovation Office Martigny (CH); Corporate R&D

Director:

Dr. Markus Rossi, Head of Innovation Office

Company:

ams OSRAM

Year of establishment:

1981

Number of employees:

250+

Office locations in Europe

Premstaetten; Austria
Munich; Germany
Rueschlikon; Switzerland

Contact information:

Sectors of expertise:

Manufacturing, Sensors, Lighting, Software and IT services

Selected services or products (AI-powered or enabling AI):

High Performance Vital Sign-Analog Frontend with integrated algorithms:
integrated multi-vital sign monitoring device, which provides a complete photoplethysmogram (PPG), electrocardiogram (ECG), body impedance (BioZ), and electrodermal activity (EDA). PPG measures the pulse rate or blood oxygen by sampling light modulated by the blood vessels, which expand and contract as blood pulses through them. ECG is the reference for any measurement of the biopotential generated by the heart. With EDA, it is possible to measure the skin's water content, and with BioZ, the body composition with an electrical system.

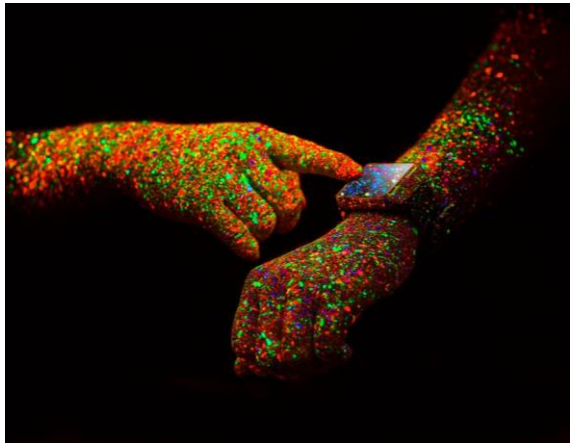
CMOS Image Sensors:
With ams OSRAM's emitters, sensors, ASICs and algorithms, OEMs can increase user-friendliness and improve product design. ams OSRAM is the ideal partner when it comes to high-performance optical sensor solutions for computer technology. For example, Mira030 is a high-speed global shutter image sensor for applications that require compact solutions. It outputs monochrome images with an effective pixel array of 1080H × 1280V, and supports complex on-chip operations such as high dynamic range (HDR) mode, external triggering, windowing, horizontal or vertical mirroring. Its maximum frame rate is 180 fps at a full image resolution. On-chip registers can be accessed via the standard I^2C interface

Selected projects, EC or nationally-funded:

- Newlife "New remote non-invasive monitoring solutions for ensuring the health of mothers and babies before and after birth", Chips Joint Undertaking (grant no. 101095792), 2023-2025
- EdgeAI "Edge AI Technologies for Optimised Performance Embedded Processing", Chips Joint Undertaking (grant no. 101097300), 2022-2025
- Energy ECS "Smart and secure energy solutions for future mobility", Chips Joint Undertaking (grant no. 101007247), 2021-2024
- MirelAI "MIcroelectronics RELiability driven by Artificial Intelligence", Horizon Europe (Industrial Doctoral Network, grant no. 101072491), 2022-2026

Topics of interest:

Cognition and AI, computer vision, human interfaces, intelligent robotics, machine learning




AI

Unit name:
ELLIS unit Graz

Director(s):
Prof. Wolfgang Maass

Coordinating organization(s):
Graz University of Technology (TU Graz)

Contact information:

Introduction:
The ELLIS Unit Graz is located at the Graz University of Technology (TU Graz) and tightly coupled to the Graz Center for Machine Learning (GraML) of TU Graz. Its activities are concentrated on foundational machine learning research with strong links to other scientific disciplines and industry. The unit's current research fields include Computer Vision, Non-smooth and Convex Optimization, Analysis of Learning Processes in the Brain through Theory and Large-scale Models, Bio-inspired and Energy-efficient Machine Learning, Domain Specialized Machine Learning and Trust, Resource-efficient Probabilistic Models for Intelligent Systems, Probabilistic Machine Learning and Tractable Inference, as well as Recommender Systems and Behavioral Analytics.

Link to introduction video

Unit members

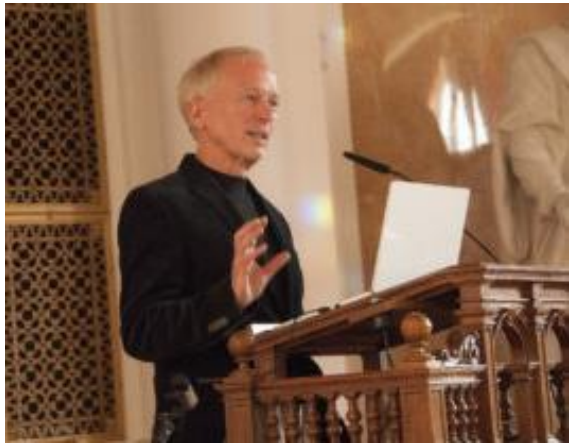
Coordination:

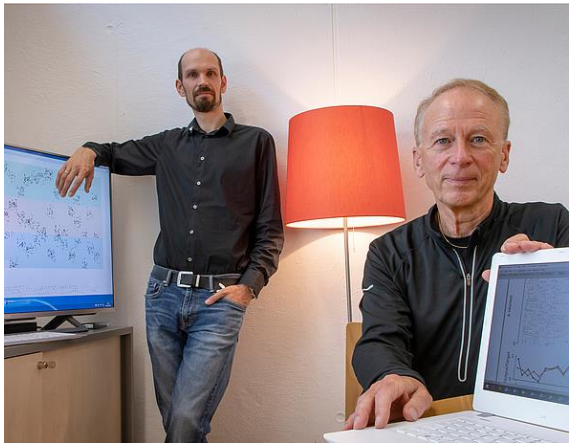
Scholars:

Fellows:

Members:
- Horst Bischof
- Ozan Özdenizci
- Thomas Pock
- Robert Legenstein
- Robert Peharz
- Elisabeth Lex
- Franz Pernkopf

Affiliated organizations(s):
- Graz Center for Machine Learning (GraML) of TU Graz






16c

Unit name:
ELLIS unit Linz

Director(s):
Prof. Sepp Hochreiter

Coordinating organization(s):
Johannes Kepler University Linz

Contact information:

Introduction:
The ELLIS unit Linz contributes to coordinating machine learning excellence in Europe and to establish a local sustainable ecosystem of machine learning stakeholders covering the entire value network to facilitate and accelerate a broad uptake and integration of Machine Learning technologies. The unit conducts basic machine learning research at the highest levels in coordination with other ELLIS sites and thereby advance theories, algorithms, and applications of machine learning. The unit was established on the premises of the LIT AI Lab located at the Johannes Kepler University Linz (JKU) and has financial support from University and industrial partners with a budget of ~25.0 million € across five years.

Link to introduction video

Unit members

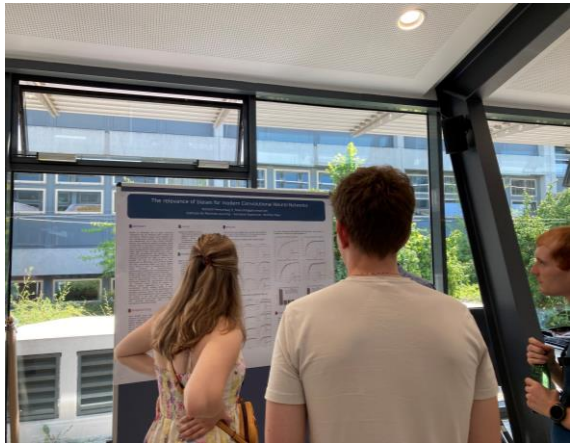
Coordination:
- Jenny Joana Knauth

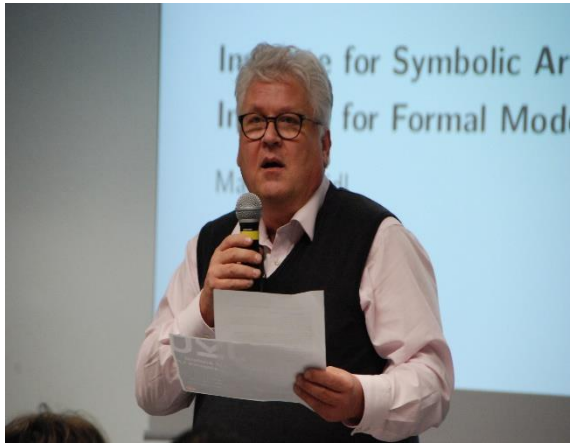
Scholars:
- Günter Klambauer

Fellows:
- Johannes Fürnkranz
- Gerhard Widmer

Members:
- Bernhard Nessler

Affiliated organizations(s):
- Artificial Intelligence Research Group at the Institute of ML




for Symbolic
for Formal

Unit name:
ELLIS unit Vienna

Director(s):
Prof. Christoph H. Lampert

Coordinating organization(s):
Institute of Science and Technology Austria (ISTA)

Contact information:

Introduction:
Building on IST Austria's mission statement the ELLIS unit Vienna will conduct basic research in machine learning and related areas, foster interdisciplinary interaction between scientists and scientific disciplines, and provide a world-class environment for science and an attractive destination for doctoral students, postdocs, and professors from all countries. The research focus comprises (1) Core Machine Learning such as transfer learning, trustworthy learning and theory of deep learning, (2) Optimization covering both continuous as well as discrete optimization, large-scale distributed optimization, and inference in graphical models, (3) Computer Vision and Image Processing with emphasis on generative image models, natural image statistics, and automatic scene understanding, and (4) Statistical Models for the Life Sciences to...(more at the website)

Link to introduction video

Unit members

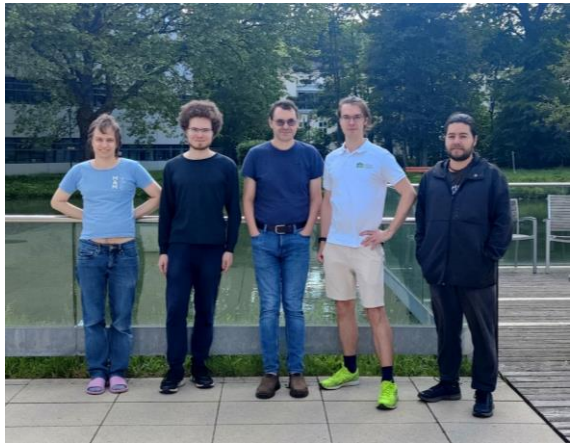
Coordination:
- Ksenja Harpprecht

Scholars:
- Dan Alistarh
- Matthew Robinson

Fellows:
- Vladimir Kolmogorov

Members:
- Monika Henzinger
- Bingqing Cheng
- Francesco Locatello
- Marco Mondelli

Affiliated organizations(s):




CrAM: A Compression-Aware
Minimizer

TRAIL
TRUSTED AI LABS

Research node:
TRAIL-TRusted AI Labs

Directors:
Prof. Gianluca Bontempi
Prof. Thierry Dutoit
Prof. Benoit Macq

Year of establishment:
2020

Number of researchers:
101+

Parent organizations:
SPW-Research (Walloon Government)

All French-speaking Universities of Wallonia and Research Centres

Contact information:

Topics of expertise
computer vision, machine learning

Selected publications, peer-reviewed

- B. Gérin, et al., "Multi-stream cellular test-time adaptation of real-time models evolving in dynamic environments", Computer Vision and Pattern Recognition, 2024
- J. Houyon, et al., "Online Distillation with Continual Learning for Cyclic Domain Shifts", IEEE/CVF Conference on Computer Vision and Pattern Recognition, 2023
- L. G. Jiménez, et al., "Computational Evaluation of the Combination of Semi-Supervised and Active Learning for Histopathology Image Segmentation with Missing Annotations", IEEE/CVF International Conference, 2023
- D. Manjah, et al., "Stream-Based Active Distillation for Scalable Model Deployment", CVPRW, 2023

Selected projects, funded by the European Commission or national agencies

- MedReSyst-CA "Médecine des réseaux et des systems", FEDER co-funded by the Walloon region, 2021-2027
- AI4DEBUNK "Participative Assistive AI-powered Tools for Supporting Trustworthy Online Activity of Citizens and Debunking Disinformation", European Commission, 2024-2027
- TEF-Health "Testing and Experimentation Facility for Health AI and Robotics", European Commission, Horizon Europe, 2023-2027
- ALGEPI, "Understanding ALGorithmic gatekeepers to promote EPIstemic welfare", 2023-2026

Related study programmes, doctoral or master levels

- Training and programmes offered by TRAIL founding universities, TRAIL Institute

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KU LEUVEN

LEUVEN.AI INSTITUTE

Research node:

Leuven.AI-KU Leuven Institute for Artificial Intelligence

Directors:

Prof. Luc De Raedt

Year of establishment:

2020

Number of researchers:

101+

Parent organizations:

KU Leuven

Contact information:

Topics of expertise

cognition and AI, automated reasoning and inference, case-based reasoning, computer vision, constraint processing, ethical AI, heuristic search, human interfaces, intelligent robotics, knowledge representation, machine learning, multi-agent systems, natural language processing, planning and action, reasoning under uncertainty, generative AI

Selected publications, peer-reviewed

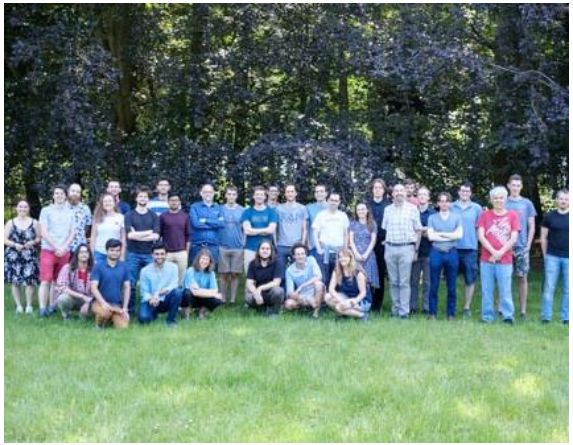
- R. Hemelings, et al., "Deep learning on fundus images detects glaucoma beyond the optic disc", Sci. Rep., 2021
- Y. Feng, et al., "A statistical learning approach to modal regression", J. Mach. Learn. Res., 2020
- M. Delange, et al., "A continual learning survey: Defying forgetting in classification tasks", IEEE Trans. Pattern Anal. Mach. Intell., 2021
- S. Vandenhende, et al., "Multi-task learning for dense prediction tasks: A survey", IEEE Trans. Pattern Anal. Mach. Intell., 2021
- L. de Raedt, et al., "From statistical relational to neural-symbolic artificial intelligence", the Twenty-Ninth International Joint Conference on Artificial Intelligence, 2021
- T. Deruyttere, et al., "Giving commands to a self-driving car: How to deal with uncertain situations?", Eng. Appl. Artif. Intell., 2021

Selected projects, funded by the European Commission or national agencies

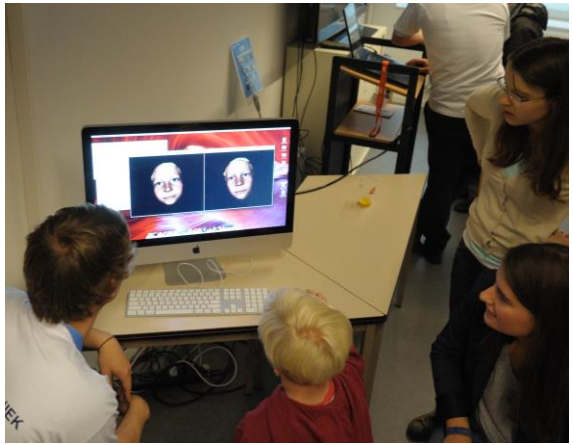
- TAILOR "Foundations of Trustworthy AI-Integrating Reasoning, Learning and Optimization", European Commission, Horizon 2020 (grant no. 952215), 2020-2024
- AI4MEDIA "A European Excellence Centre for Media, Society and Democracy", European Commission, Horizon 2020 (grant no. 951911), 2020-2024
- ELISE "European Learning and Intelligent Systems Excellence", European Commission, Horizon 2020 (grant no. 951847), 2020-2023
- FLAIR "Flemish AI Research Program", AI Vlaanderen
- Ongoing Leuven.AI ERC projects

Related study programmes, doctoral or master levels

- Advanced Master of Artificial Intelligence, KU Leuven
- Advanced Master Artificial Intelligence in Business and Industry, KU Leuven








ARTIFICIAL INTELLIGENCE RESEARCH GROUP

Research node:
Artificial Intelligence Lab

Directors:
Prof. Dr. Ann Nowé

Year of establishment:
1983

Number of researchers:
51-100

Parent organizations:
Vrije Universiteit Brussel

Contact information:

Topics of expertise

cognition and AI, automated reasoning and inference, computer vision, knowledge representation, machine learning, multi-agent systems, natural language processing

Selected publications, peer-reviewed

- R. van Trijp, et al., "The FCG Editor: An innovative environment for engineering computational construction grammars", PLOS ONE, 2022.
- C. F. Hayes, et al., "A practical guide to multi-objective reinforcement learning and planning", Autonomous Agents and Multi-Agent Systems, 2022.
- L. Houthuys and J. A. K. Suykens, "Tensor-based restricted kernel machines for multi-view classification", Information Fusion, 2021
- E. Bargiacchi, et al., "AI-toolbox: A C++ library for reinforcement learning and planning (with Python Bindings)", Journal of Machine Learning Research, 2020
- G. A. Wiggins, "Creativity, information, and consciousness: The information dynamics of thinking", Physics of Life Reviews, 2020
- V. Fonseca, et al., "A computational method for the identification of Dengue, Zika and Chikungunya virus species and genotypes", PLOS Neglected Tropical Diseases, 2019
- A. Nowé, et al., "Game theory and multi-agent reinforcement learning", Reinforcement Learning: State-of-the-Art, Springer, 2012

Selected projects, funded by the European Commission or national agencies

- PEER "The hyPEr ExpeRt collaborative AI assistant", European Commission, Horizon Europe (grant no. 101120406), 2023-2027
- CTRLxAI=T(H)RUST "CTRL schemes merged with eXplainable AI for t(h)rustworthy control of physical dynamic systems", VLAIO, SBO (grant no. FWOSBO46), 2022-2026
- DESCARTES "infectious DisEaSe eConomics and Ai with guaRanTEeS", VLIR, iBOF (grant no. iBOF/21/027), 2021-2024
- TAILOR "Foundations of Trustworthy AI-Integrating Reasoning, Learning and Optimization", European Commission, Horizon Europe (grant no. 952215), 2020-2023
- AI Plan "Flanders AI Research Program", Flemish Government (AI Plan), 2019-ongoing

Related study programmes, doctoral or master levels

- M.Sc. in Applied Sciences and Engineering, Computer Science, specialisation Artificial Intelligence, Vrije Universiteit Brussel
- M.Sc. in Applied Informatics: profile Artificial Intelligence, Vrije Universiteit Brussel
- Doctor of Sciences, Vrije Universiteit Brussel


SNN
BEST PAPER AWARD
uni.lu


AI AS SCIENCE
AI AS APPLICATION


AI
XPERIENCE

Industry node:

European Standardization and Industry Development Department. AI and Data team

Director:

Liang Chen

Company:

Huawei

Year of establishment:

2012

Number of employees:

51-100

Office locations in Europe

Leuven, Belgium; Paris & Nice, France; also, worldwide

Contact information:

Sectors of expertise:

Corporate services, hardware, software, and ICT services

Selected services or products (AI-powered or enabling AI):

- Huawei Cloud. Huawei Cloud is a cloud computing platform owned by Huawei. It provides elastic cloud servers, object storage services, cloud databases, networks, data analysis, machine learning, software development cloud and other cloud computing services. Huawei Cloud provides more than 200 cloud service products, among which Huawei Cloud Server (Huwei Cloud ECS), Huawei Cloud Object Storage (Huawei Cloud OBS), Huawei Cloud CDN, etc. are the most used services . Huawei Cloud has established 45 data centers and more than 2,500 CDN nodes in 23 regions and countries around the world, including Europe. According to a report by Gartner Consulting , Huawei Cloud accounts for 4.61% of the global cloud computing market in 2021, ranking fifth.
- ModelArts. ModelArts is a one-stop AI platform that empowers developers and data scientists to rapidly build and deploy AI models, accelerating intelligent industry upgrades, with support for major AI frameworks.
- Boot-X, advanced Smart Service for building trust in data sharing in the supply chains. The Boot-X is a Gaia-X / IDSA compliant cloud based Data Space implementation. Boot-X is a part of Huawei EDS (Enterprise Data Space) whose main focus is on cross-border data sharing complaint with Gaia-X/IDSA/DSSC reference architecture/model, e.g. following international standards for data exchange between Chinese and European industries. The Boot-X Connector is compatible with Eclipse Data Space connector, with enhanced features like local data usage policy management and enforcement, Self-Sovereign identity federation and compliance monitoring.

Selected projects, EC or nationally-funded:

- DECICE “Device-Edge-Cloud Intelligent Collaboration framework”, Horizon Europe (grant no. 10109582), 2022-2025
- StairwAI “Stairway to AI: Ease the Engagement of LowTech Users to the AI-on-Demand Platform through AI”, Horizon 2020 (grant no. 101017142), 2021-2023
- AI4Sustainability “AI4Sustainability EIT Digital Summer School ”, Horizon Europe (Pillar 3-EIT Funds), 2024
- Zero-SWARM “Zero-Enabling Smart networked control framework for agile cyber physical production systems of systems”, Horizon Europe (grant no. 101057083), 2022-2024

Topics of interest:

cognition and AI, computer vision, ethical AI, machine learning, multi-agent systems, natural language processing, generative AI


HUAWEI


MWC Barcelona 2024
INTERNATIONAL DATA SPACES ASSOCIATION
Global Data Spaces Roundtable
Global Data Spaces

Unit name:
ELLIS unit Leuven

Director(s):
Prof. Dr. Matthew Blaschko

Coordinating organization(s):
KU Leuven

Contact information:

Introduction:
The ELLIS unit Leuven comprises the research activities of five highly active faculty selected for academic excellence and complementarity of research areas. The focus of the unit is to develop a fast conduit between key application areas, core machine learning technologies, and real-time implementations on edge devices. The research focuses on advancing machine learning methods such as representation learning, continual learning, neural network compression and discrete optimization methods suitable for optimized edge implementations. In addition, it focuses on applications such as computer vision, self-driving cars, and cultural heritage, natural language processing and multimodal data modelling, as well as chip design, resource efficient machine learning processing, and health applications in close collaboration...(more at the website)

Link to introduction video

Unit members

Coordination:

Scholars:

Fellows:
- Luc De Raedt
- Marie F. Moens
- Luc Van Gool
- Johan Suykens
- Marian Verhelst
- Tinne Tuytelaars

Members:
- Renaud Detry
- Pedro J. Gonçalves

Affiliated organizations(s):
- KU Leuven Medical Imaging Research Center

Unit name:
ELLIS unit Sofia

Director(s):
Prof. Dr. Luc Van Gool

Coordinating organization(s):
Institute for Computer Science, Artificial Intelligence and Technology (INSAIT)

Contact information:

Introduction:
The Institute for Computer Science, Artificial Intelligence and Technology (INSAIT), located in Sofia, Bulgaria, is the host of the first-ever ELLIS Unit in Eastern Europe. The core mission of the new unit is to bring world-class machine learning research, education, and deep-tech entrepreneurship to the region of Eastern Europe. INSAIT was launched in April 2022 in partnership with ETH Zurich and EPFL in Switzerland, is the first center of its kind in Eastern Europe and is strongly supported by the Bulgarian government. Given its strategic partnership with ETH Zurich and EPFL, INSAIT has strong ties with the ELLIS Units in Zurich and Lausanne. The unit's research areas cover both applied and fundamental aspects: computer vision, optimization and theory of machine learning, natural language processing, robotics, and fair, robust, secure and reliable machine learning.

Link to introduction video

Unit members

Coordination:
- Borislav Petrov

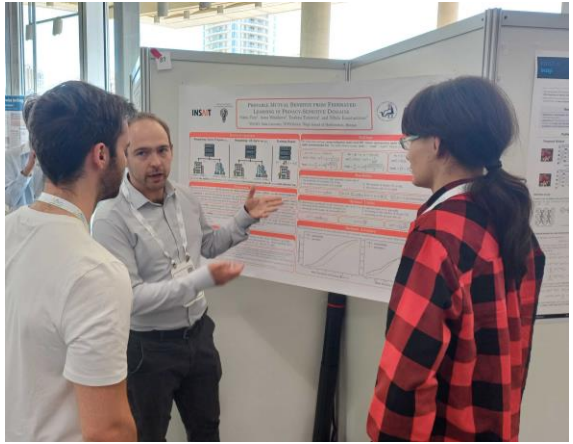
Scholars:

Fellows:
- Martin Vechev

Members:
- Nikola Konstantinov
- Danda Pani Paudel

Affiliated organizations(s):


INSAIT
ПО ПЪТЯ НА НАУКАТА
Гимназисти с откритията в областта на изкуствения интелект


INSAIT


INSAIT


INSAIT

AIRI

Research node:

Center for Artificial Intelligence And Cybersecurity

Directors:

Prof. dr. sc. Jonatan Lerga

Prof. dr. sc. Ivan Štajduhar

Year of establishment:

2020

Number of researchers:

51-100

Parent organizations:

University of Rijeka

Contact information:

Topics of expertise

Computer vision, ethical AI, human interfaces, intelligent robotics, machine learning, multi-agent systems, natural language processing

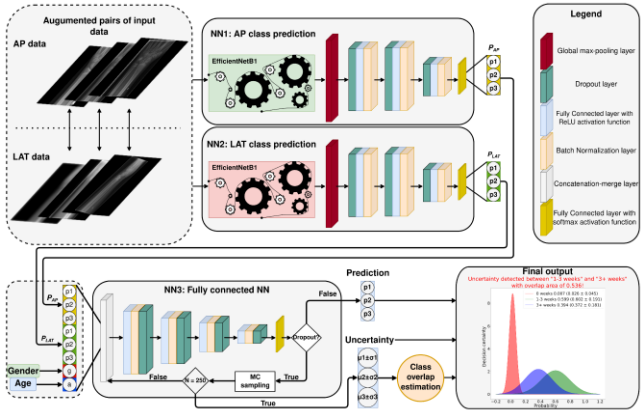
Selected publications, peer-reviewed

- M. Njirjak, et al., "The Choice of Time–Frequency Representations of Non-Stationary Signals Affects Machine Learning Model Accuracy: A Case Study on Earthquake Detection from LEN-DB Data", Mathematics, 2022
- E. Otović, et al., "Intra-domain and cross-domain transfer learning for time series data—How transferable are the features", Knowledge-Based Systems, 2022
- N. Lopac, et al., "Detection of Non-Stationary GW Signals in High Noise From Cohen's Class of Time–Frequency Representations Using Deep Learning", IEEE Access, 2022
- F. Hržić, et al., "Modeling Uncertainty in Fracture Age Estimation from Pediatric Wrist Radiographs", Mathematics, 2021
- S. Šimunić, et al., "Verifiable Computing Applications in Blockchain", IEEE Access, 2021
- K. Babić, et al., "Characterisation of COVID-19-Related Tweets in the Croatian Language: Framework Based on the Cro-CoV-cseBERT Model", Applied Sciences, 2021

Selected projects, funded by the European Commission or national agencies

- RadiologyNET "Machine Learning for Knowledge Transfer in Medical Radiology", Croatian Science Foundation (grant no. IP-2020-02-3770), 2021-2024
- InfoCoV "Multilayer Framework for the Information Spreading Characterization in Social Media during the COVID-19 Crisis", Croatian Science Foundation (grant no. IP-2020-02-3770), 2020-2022
- DeShPet "Design of short catalytic peptides and peptide assemblies", Croatian Science Foundation (grant no. UIP-2019-04-7999), 2020-2025
- KACAVIS "Knowledge-based Approach to Crowd Analysis in Video Surveillance", Croatian Science Foundation (grant no. HRZZ-IP-01-2018), 2018-2020

Related study programmes, doctoral or master levels


Augumented pairs of input data
AP data
LAT data
NN1: AP class prediction
EfficientNetB1
NN2: LAT class prediction
EfficientNetB1
Legend
Global max-pooling layer
Dropout layer
Fully Connected layer with ReLU activation function
Batch Normalization layer
Concatenation-merge layer
Fully Connected layer with softmax activation function
NN3: Fully connected NN
Dropout
False
True
MC sampling
Prediction
Uncertainty
Class overlap estimation
Final output
Gender
Age


KAMPUS

NEAR EAST UNIVERSITY
AI AND ROBOTICS INSTITUTE

Research node:
NEU AI and Robotics Institute

Directors:
Prof. Dr. İrfan Suat GÜNSEL
Prof. Dr. Mustafa KURT
Prof. Dr. Fadi AL-TURJMAN

Year of establishment:
2020

Number of researchers:
101+

Parent organizations:
Near East University

Contact information:

Topics of expertise

Computer vision, machine learning

Selected publications, peer-reviewed

- S. Nataraj, et al., "Intelligent robotic chair with thought control and communication aid using higher order spectra band features", IEEE Sensors Journal, 2020
- V. Gomathy, et al., "Investigating the Spread of Coronavirus Disease via Edge-AI and Air Pollution Correlation", ACM Transactions on Internet Technology, 2021
- F. Al-Turjman, et al.,"Enhanced deployment strategy for the 5G drone-BS using artificial intelligence", IEEE Access, 2023
- D. Deebak, F. Al-Turjman, "Digital-twin assisted: Fault diagnosis using deep transfer learning for machining tool condition", Wiley International Journal of Intelligent Systems, 2021
- F. Al-Turjman, H. Osuli, "AI for dynamic packet size optimization of batteryless IoT nodes: A case study for wireless body area sensor networks", Neural Computing and Applications, 2020
- R. Gupta, et al., "Smart contract privacy protection using AI in cyber-physical systems: Tools, techniques, and challenges", IEEE Access, 2022

Selected projects, funded by the European Commission or national agencies

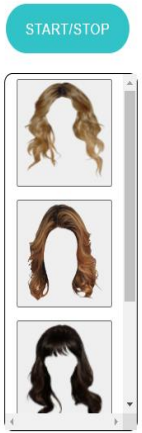
- "Intelligent Student Registration System", Near East University (grant no. 8079), 2020-2022
- "Cryptocurrency via Blockchain Interface", Near East University (grant no. 8078), 2020-2022
- "Virtual Hairstyle", Near East University (grant no. 8077), 2019-2021
- "Artificial Intelligence in Everything", Near East University (grant no. 8076), 2019-2021

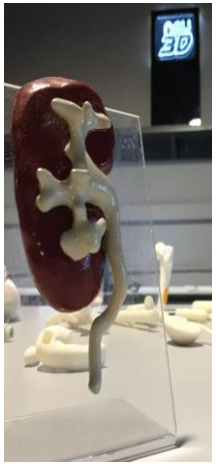
Related study programmes, doctoral or master levels

- M.Sc. Artificial Intelligence, Near East University

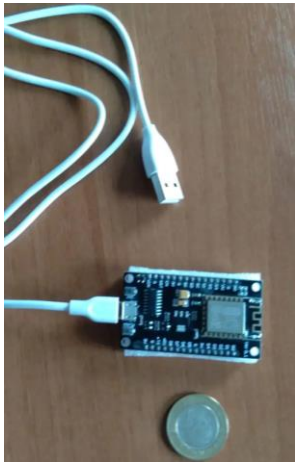

5
NEAR EAST UNIVERSITY
NEAR EAST UNIVERSITY


ARTIFICIAL INTELLIGENCE IN EVERYTHING
HOME
ABOUT
AUTHORS
smartworks
International Conference on Artificial Intelligence In Everything
Lefkosa, Cyprus | August 02-04, 2022 | 9am Cyprus Time


START/STOP




SpeechToText
Source Language
Target Language
English
Turkish
Tap on mic to speak



NEAR EAST UNIVERSITY
INTERNATIONAL RESEARCH CENTER FOR AI AND IOT

Research node:
NEU-International Research Center for AI and IoT

Directors:
Prof. Dr. Mustafa Kurt
Prof. Dr. Fadi Al-Turjman

Year of establishment:
2019

Number of researchers:
101+

Parent organizations:
NEAR EAST UNIVERSITY

Contact information:

Topics of expertise

Machine learning

Selected publications, peer-reviewed

- S. Chaudhry, et al., "A privacy enhanced authentication scheme for securing smart grid infrastructure", IEEE Transactions on Industrial Informatics, 2021
- R. Sekaran, et al., "Ant colony resource optimization for industrial IoT and CPS", International Journal of Intelligent Systems, 2021
- S. Qayyum, et al., "Managing smart cities through six sigma DMADICV method: A review-based conceptual framework", Elsevier Sustainable Cities and Society, 2021
- D. Deebak, F. Al-Turjman, "Digital-twin assisted: Fault diagnosis using deep transfer learning for machining tool condition", Wiley International Journal of Intelligent Systems, 2021.
- F. Ullah, et al., "Advertising through UAVs: Optimized path system for delivering smart real-estate advertisement materials", Wiley International Journal of Intelligent Systems, 2021
- F. Al-Turjman, D. Deebak, "A proxy-authorized public auditing scheme for cyber-medical systems using AI-IoT", IEEE Transactions on Industrial Informatics, 2021

Selected projects, funded by the European Commission or national agencies

- "Covid 19 Project", Near East University (grant no. 8083), 2020-2022
- "The student-certificate management system based on Blockchain Project", Near East University (grant no. 8082), 2020-2022
- "NEU-Attend APP Project", Near East University (grant no. 8081), 2019-2021
- "Mobile App for Campus Facility Detection", Near East University (grant no. 8080), 2019-2021

Related study programmes, doctoral or master levels

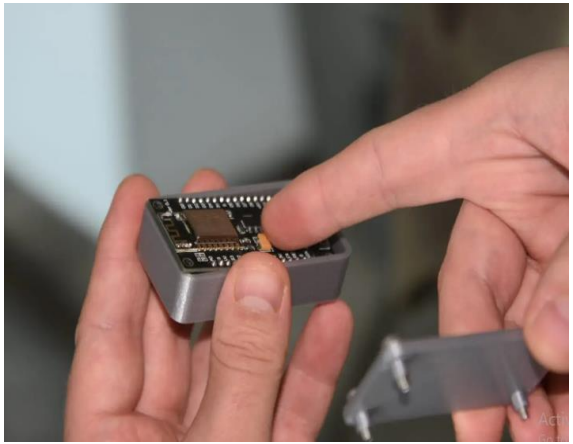
- M.Sc. Artificial Intelligence, Near East University

NEAR EAST UNIVERSITY
INTERNATIONAL RESEARCH CENTER FOR AI AND IOT

CT-Scan Image Uploads

View Last Location of Positive Users

S/NO	USER	LONGITUDE	LATITUDE	COVID STATUS	TIME	IMAGE	TRACK LOCATIONS
1	ahmed mubarak	33.3151935	35.2259825	Positive	May 24, 2021, 2:50 p.m.		Locations History
2	yemi okome	33.3151935	35.2259825	Positive	May 24, 2021, 3:47 p.m.		Locations History
3	xiaojun Li	33.319429	35.22746	Positive	May 26, 2021, 5:15 p.m.		Locations History



u Üniversitesi' nden Uluslararası Bilim

Gelişen. Doç. Adedodyn Hussain, Sinem Alturjman, Ahmed Ali Abdelazim, Kena Wang, Guohong Wang, Deng Zhujun, Shuman Li, Sarumi Usman Abidemi gibi pek çok önemli akademisyen ve profesyonel sunum yaptı.350'nin üzerinde bildiri başvurusu alan konferansta 112 makale sunuldu. FoNeS-IoT 2022de sunulan bildiriler, Springer tarafından "Veri Mühendisliği ve İletişim Teknolojileri (LNDECT) Üzerine Ders Notları" kitap serisinde de yayınlanacak. Kitap serisi, Web of Science'in bir parçası olan Ei Compendex, Scopus, Inspec, Conference Proceedings Citation Index (CPCI) içinde indekslenecek.

Prof. Dr. Fadi Al-Turjman: "FoNeS-IoT 2022 ile geleceğin dünyasını şekillendirecek yapay zeka alanında çok önemli bir vizyon toplantısına ev sahipliği yapmış olduk."

Yakın Doğu Üniversitesi bünyesinde faaliyet gösteren, Yapay Zeka ve Robotik Enstitüsü, sağlık ve pandemi yönetimi, ilaç ve diş hekimliği endüstrileri, eğlence ve eğitim çözümleri, enerji yönetimi, ulaşım optimizasyonu, telekomünikasyon/nesnelerin interneti ve bil-

aiphoria

Industry node:
Aiphoria

Director:
Denis Chernilevskiy, CEO

Company:
Aiforia Limited

Year of establishment:
2022

Number of employees:
20-49

Office locations in Europe
Limassol, Cyprus; also, Dubai, UAE.

Contact information:

Sectors of expertise:

corporate services, consumer goods, design, education, energy and mining, entertainment, finance, hardware and networking, healthcare, legal, manufacturing, media and communications, real estate, recreation and travel, retail, software and IT services, textiles, transportation and logistics

Selected services or products (AI-powered or enabling AI):

- Virtual AI-enabled Employees. We implement Aiphoria Pro Platform that provides access to diverse selection of functional virtual employees (from Support to Marketing and Finance), tweaked for the specifics various industries. Our "Pros" provide human-like interaction (99% of users do not guess that it's AI behind Pro) enhanced with LLM-capabilities and 24/7 availability.
- Bespoke AI Software Development. We provide software development services to corporates, dreaming about creation of unique AI assets inside organization-tailored solutions allow to consider all individual requirements of the exact company and provide hyper-personalized AI-tech. Developing solution in close connection to business contributes to having a substantial profit impact and knowledge exchange, enabling AI competencies within company.
- AI Strategy Consulting. Our team with 25+ years experience in creating innovative AI solutions and devices helps organizations to navigate in modern technological hiatus-together with management we develop a comprehensive strategic approach to utilize AI technologies based on the cost/benefit analysis and ensure keeping competitive advantage for the years to come.

Selected projects, EC or nationally-funded:

Topics of interest:

cognition and AI, automated reasoning and inference, case-based reasoning, commonsense reasoning, computer vision, constraint processing, ethical AI, heuristic search, human interfaces, knowledge representation, machine learning, multi-agent systems, natural language processing, planning and action, reasoning under uncertainty, generative AI


NERVOSO


START
SOMETHING
NEW


EMAAR

Centre for Artificial Intelligence in Oncology

Research node:
Centre for Artificial Intelligence in Oncology

Directors:
Prof. Michal Kozubek

Year of establishment:
2021

Number of researchers:
21-50

Parent organizations:
Masaryk University

Contact information:

Topics of expertise

Computer vision, machine learning, generative AI

Selected publications, peer-reviewed

- D. Wiesner, et al., "Generative modeling of living cells with SO(3)-equivariant implicit neural representations", Medical Image Analysis, 2024
- M. Gallo, et al., "Shedding light on the black box of a neural network used to detect prostate cancer in whole slide images by occlusion-based explainability", New Biotechnology, 2023
- P. Zelina, et al. "Extraction, labeling, clustering, and semantic mapping of segments from clinical notes", IEEE, 2023
- M. Maška, et al., "The cell tracking challenge: 10 years of objective benchmarking", Nature Methods, 2023
- L. Hradecká, et al., "Segmentation and tracking of mammary epithelial organoids in brightfield microscopy", IEEE Transactions on Medical Imaging, 2023
- T. Brázdil, et al., "Automated annotations of epithelial cells and stroma in HE-stained WSI using cytokeratin re-staining", The Journal of Pathology: Clinical Research, 2022

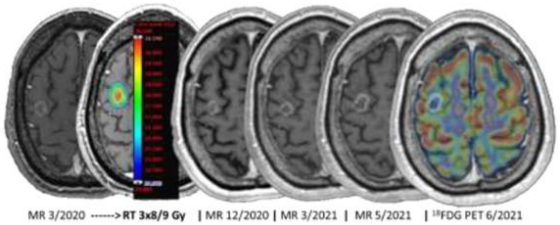
Selected projects, funded by the European Commission or national agencies

- "BioMedAI TWINNING", EU Horizon Europe, (grant no. 101079183), 2022-2025
- "MRI radiomic analysis in radiotherapy of brain metastases", Czech Health Research Council (grant no. NU22-03-00159), 2022-2025
- "Brain tumor segmentation and classification", Czech Health Research Council (grant no. NU21-08-00359), 2021-2024
- "AI support for Clinical Oncology and Patient Empowerment", Grant Agency of Masaryk University (grant no. MUNI/G/1763/2020), 2021-2023

Related study programmes, doctoral or master levels

- M.Sc. in Visual Informatics, Specialization: Image Processing and Analysis, Masaryk University
- Ph.D. in Computer Science, Specialization: Biomedical Image Processing, Masaryk University


MASARYKOVA UNIVERZITA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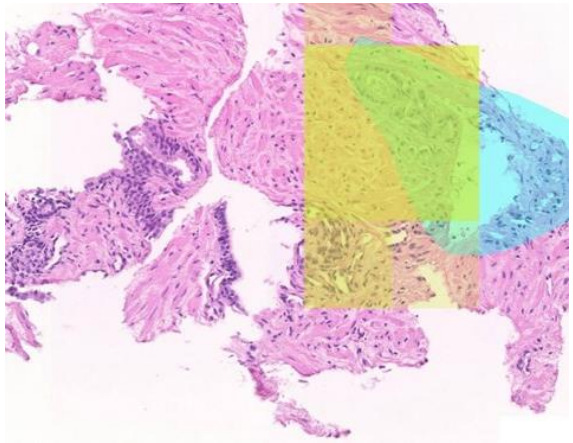

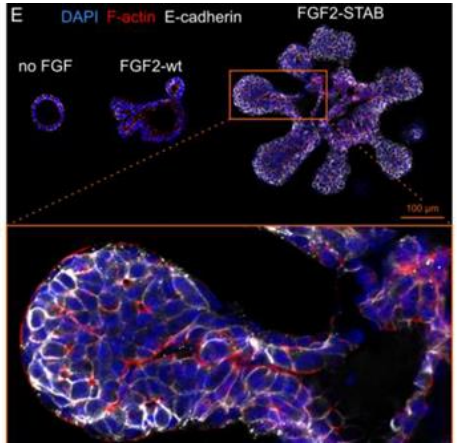
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DAPI F-actin E-cadherin
FGF2-STAB
no FGF
FGF2-wt
100 µm

CZECH INSTITUTE OF INFORMATICS ROBOTICS AND CYBERNETICS CTU IN PRAGUE

Research node:

Czech Institute of Informatics, Robotics and Cybernetics (CIIRC)

Directors:

Dr. Ondrej Velek

Prof. Vladimir Marik

Year of establishment:

2013

Number of researchers:

101+

Parent organizations:

Czech Technical University in Prague

Contact information:



Topics of expertise

Cognition and AI, automated reasoning and inference, computer vision, constraint processing, ethical AI, intelligent robotics, machine learning, multi-agent systems, natural language processing, planning and action, reasoning under uncertainty

Selected publications, peer-reviewed

- R. Arandjelovic, et al., "NetVLAD: CNN architecture for weakly supervised place recognition", IEEE Transactions on Pattern Analysis and Machine Intelligence, 2018
- C. Toft, et al., "Long-term visual localization revisited", IEEE Transactions on Pattern Analysis and Machine Intelligence, 2020
- F. Arrigoni, et al., "Revisiting Viewing Graph Solvability: an Effective Approach Based on Cycle Consistency", IEEE Transactions on Pattern Analysis and Machine Intelligence, 2022
- P. Bojanowski, et al., "Enriching word vectors with subword information", Transactions of the association for computational linguistics, 2017
- T. C. Hales, et al., "A formal proof of the Kepler conjecture", Forum of mathematics, Pi, 2017
- T. D. Bruin, et al., "Experience selection in deep reinforcement learning for control", Journal of Machine Learning Research, 2018

Selected projects, funded by the European Commission or national agencies

- ELISE "European Network of AI Excellence Centres", European Commission (grant no. 951847), 2020-2024.
- VISION "Value and Impact through Synergy, Interaction and coOperation of Networks of AI Excellence Centres", European Commission (grant no. 952070), 2020-2024.
- ELIAS "European Lighthouse of AI for Sustainability", European Commission (grant no. 101120237), 2023-2027.
- ERC AdG, FRONTIER, "Federated foundational models for embodied perception", EC (GA no. 101097822), 2024-2028.
- ERC CoG, AI4REASON, "Artificial Intelligence for Large-Scale Computer-Assisted Reasoning", EC (GA no. 649043), 2015-2020.

Related study programmes, doctoral or master levels

- MSc program, Open Informatics, Czech Tech. Uni., Facultry of Elec. Eng.
- Phd program, Czech Tech. Uni., Facultry of Elec. Eng.

ellis

UNIT
PRAGUE

IEEE computer society

CVF

Best Paper

Presented to

Petr Hruby, Timothy Duff, Anton Leykin, and Tomas Pajdla

For the CVPR 2022 paper

"Learning to Solve Hard Minimal Problems"

Rama Chellappa
General Chair

Jiri Matas
General Chair

Long Quan
General Chair

Mubarak Shah
General Chair

IEEE

Unit name:

ELLIS unit Prague

Director(s):

Dr. Josef Sivic

Coordinating organization(s):

Czech Institute of Informatics, Robotics and Cybernetics (CIIRC)

Contact information:

Introduction:

The ELLIS unit Prague is committed to making ELLIS the leading open science AI organization in the world by: (1) outstanding foundational research in AI and related disciplines, (2) supporting the mobility of researchers within ELLIS and elsewhere, (3) building a European brand of PhD and Postdoc program, and (4) transferring research results to Czech as well as European industry to boost economic and societal innovation in Europe. The unit is hosted at the Czech Institute of Informatics, Robotics and Cybernetics (CIIRC) of the Czech Technical University and brings together five internationally recognized researchers and their teams that cover several key research areas necessary for building intelligent autonomous systems. In five years, the target is to reach at least 10 ELLIS faculty with their research teams, commitment from...(more at the website)

Link to introduction video https://www.youtube.com/watch?v=-F4azmleeWk

Unit members

Coordination:

- Marcela Kamenska

Scholars:

- Torsten Sattler

Fellows:

- Tomas Pajdla
- Tomas Mikolov
- Josef Urban

Members:

Affiliated organizations(s):

- Czech Technical University

UNIVERSITY OF COPENHAGEN

Research node:
University of Copenhagen
SCIENCE AI Centre

Directors:
Prof. Christian Igel, Dire
Dr. Anders Pall Skött

Year of establishment:
2018

Number of researchers:
101+

Parent organizations:
University of Copenhagen

Contact information:

Topics of expertise

computer vision, ethical AI, heuristic search, human interfaces, intelligent robotics, machine learning, natural language processing, planning and action, reasoning under uncertainty

Selected publications, peer-reviewed

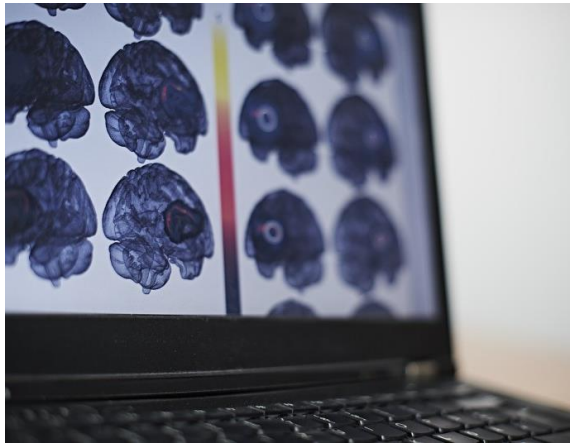
- E. Arakelyan, et al., "Adapting neural link predictors for data-efficient complex query answering". Advances in Neural Information Processing Systems (NeurIPS), 2023
- R. Cipollone, et al., "Provably efficient offline reinforcement learning in regular decision processes". Advances in Neural Information Processing Systems (NeurIPS). 2023
- C. Tucker, et al., "Sub-continental scale carbon stocks of individual trees in African drylands",. Nature, 2023.
- E. Esposito, et al., "Delayed bandits: When do intermediate observations help?", International Conference on Machine Learning (ICML), 2023
- I.E.I. Bekkouch, et al., "Multi-landmark environment analysis with reinforcement learning for pelvic abnormality detection and quantification." Medical Image Analysis, 2022
- N.S. Detlefsen, et al., "Learning meaningful representations of protein sequences." Nature Communications, 2022

Selected projects, funded by the European Commission or national agencies

- ADD "Algorithms, Data and Democracy", Villum Foundation
- DeReEco "Deep Learning and Remote Sensing for Unlocking Global Ecosystem Resource Dynamics", Villum Foundation (Villum Synergy)
- ExplainYourself, "Explainable and Robust Automatic Fact Checking", ERC Starting Grant, European Research Council(grant no. 101077481), 2023-2028
- Center for Basic Machine Learning Research in Life Science, Novo Nordisk Foundation
- Intelligent Robotic Endoscopes (IRE) for Improved Healthcare Services, European Commission, Horizon 2023

Related study programmes, doctoral or master levels

- MSc Computer Science, University of Copenhagen
- MSc Statistics, University of Copenhagen




#eudk

AALBORG UNIVERSITY

Research node:
AI for the People Centre

Directors:
Prof. Thomas B. Moeslund
Prof. Jeppe Agger Nielsen
Prof. Thomas Ploug

Year of establishment:
2019

Number of researchers:
101+

Parent organizations:
Aalborg University

Contact information:

Topics of expertise

Cognition and AI, automated reasoning and inference, computer vision, ethical AI, heuristic search, human interfaces, intelligent robotics, knowledge representation, machine learning, multi-agent systems, natural language processing, planning and action, reasoning under uncertainty

Selected publications, peer-reviewed

- J. Xie, et al., "Advanced dropout: A model-free methodology for Bayesian dropout pptimization", IEEE Transactions on Pattern Analysis and Machine Intelligence, 2022
- J. Aaen, et al., "The dark side of data ecosystems: A longitudinal study of the DAMD project", European Journal of Information Systems, 2021
- T. Ploug, S. Holm, "Right to contest AI diagnostics: Defining transparency and explainability requirements from a patient's perspective", Artificial Intelligence in Medicine, 2021
- N. Ristea, et al., "Self-supervised predictive convolutional attentive block for anomaly detection", IEEE Conference on Computer Vision and Pattern Recognition, 2022
- M. Tappler, et al., "L*-based learning of Markov decision processes", Formal Aspects of Computing, 2021
- B. Zheng, et al., "SOUP: Spatial-temporal demand forecasting and competitive supply in transportation", IEEE Transactions on Knowledge and Data Engineering, 2021

Selected projects, funded by the European Commission or national agencies

- Pioneer Centre for Artificial Intelligence, Danish National Research Foundation, 2021-2031
- Data Science Academy, Novo Nordisk Foundation, 2021-2026
- Algorithms, Data & Democracy, Villum and Velux Foundations, 2021-2031
- Digital Research Centre, Innovation Fund Denmark, 2021-2026

Related study programmes, doctoral or master levels

- M.Sc. in Artificial Intelligence, Vision and Sound, Aalborg University, Denmark
- M.Sc. in Data Science and Machine Learning, Aalborg University, Denmark

Research node:
Centre for AI Science and Applications

Directors:
Prof. Arthur Zimek
Prof. Peter Schneider-Kamp
Assoc. Prof. Luís Cruz-Filipe

Year of establishment:
2021

Number of researchers:
21-50

Parent organizations:
University of Southern Denmark

Contact information:

Topics of expertise

Automated reasoning and inference, computer vision, ethical AI, knowledge representation, machine learning

Selected publications, peer-reviewed

- H. Flynn, et al., "PAC-Bayesian lifelong learning for multi-armed bandits", Data Min. Knowl. Discov., 2022
- Y. Cai, et al., "XPROAX-Local explanations for text classification with progressive neighborhood approximation", DSAA, 2021
- A. Hartebrodt, et al., "Federated principal component analysis for genome-wide association studies" ICDM, 2021
- T. Liu, et al., "sunny-as2: Enhancing SUNNY for algorithm selection" J. Artif. Intell. Res., 2021
- L. Cruz-Filipe, et al., "Hypothetical answers to continuous queries over data streams" AAAI, 2020
- H. O. Marques, et al., "Internal evaluation of unsupervised outlier detection", ACM Trans. Knowl. Discov. Data, 2020

Selected projects, funded by the European Commission or national agencies

- CORENET "Complex chemical reaction networks for breakthrough scalable reservoir computing", European Commission (Horizon-EIC-2021-Pathfinderopen-01, grant no. 101046294), 2022-2026
- PREPARE "Know your own risk-personalized risk estimation and prevention of cardiovascular disease", Danmarks Innovationsfond (Grand Solutions), 2022-2025
- Screen4Care "Shortening the path to rare disease diagnosis by using newborn genetic screening and digital technologies", European Commission (imi, grant no. 101034427), 2021-2026
- FeatureCloud "Privacy-preserving federated machine learning integrating blockchain technology for reduced cyber risks in a world of distributed healthcare", European Commission (Horizon 2020, grant no. 826078), 2019-2023

Related study programmes, doctoral or master levels

- Master of Science, Computer Science, University of Southern Denmark
- Master of Science, Data Science, University of Southern Denmark

Research node:

The Artificial Intelligence and Machine Learning group

Directors:

Prof. Christian S. Jensen

Prof. Kim G. Larsen

Prof. Thomas D. Nielsen

Year of establishment:

2019

Number of researchers:

21-50

Parent organizations:

Aalborg University, Department of Computer Science

Contact information:

Topics of expertise

knowledge representation, machine learning, natural language processing, reasoning under uncertainty

Selected publications, peer-reviewed

- A. Masegosa, et al., "Bayesian models of data streams with Hierarchical Power Priors", International Conference on Machine Learning, 2017
- D. Campos, et al., "Unsupervised time series outlier detection with diversity-driven convolutional ensembles". VLDB Endowment, 2022
- N. Van Berkel, et al., "Effect of information presentation on fairness perceptions of machine learning predictors", CHI, 2021
- M. Goorden, et al., "Learning safe and optimal control strategies for storm water detention ponds", IFAC Conference on Analysis and Design of Hybrid Systems, 2021
- G. Pellegrini, et al., "Learning aggregation functions", International Joint Conference on Artificial Intelligence (IJCAI), 2021
- V. Ho Long, et al., "Efficient temporal pattern mining in big time series using mutual information", VLDB Endowment, 2022

Selected projects, funded by the European Commission or national agencies

- DIREC "Digital Research Centre Denmark", Innovation Fund Denmark, 2021-2026
- MORE "Management of Real-time Energy Data", European Commission (grant no. 957345), 2020-2023
- "Algorithmic Explainability for Everyday Citizens", Carlsberg Foundation, 2021-2024
- S4OS "Scalable analysis and Synthesis of Safe, Secure and Optimal Strategies for Cyber-Physical Systems", VILLUM FONDEN

Related study programmes, doctoral or master levels

- M.Sc. in Computer Science, Aalborg University
- M.Sc. in Data Science and Machine Learning, Aalborg University

Research node:
Creative AI Lab

Directors:
Prof. Sebastian Risi

Year of establishment:
2020

Number of researchers:
11-20

Parent organizations:
IT University of Copenhagen

Contact information:

Topics of expertise
human interfaces, intelligent robotics, machine learning, multi-agent systems

Selected publications, peer-reviewed

- R. Palm, et al., "Variational neural cellular automata", ICLR, 2022
- S. Sudhakaran, et al., "Growing 3D artefacts and functional machines with neural cellular automata", ALIFE, 2020
- E. Najarro, S. Risi "Meta-learning through Hebbian plasticity in random networks", NeurIPS, 2020
- S. Risi, J. Togelius, "Increasing generality in machine learning through procedural content generation", Nature Machine Intelligence, 2020
- V. Volz, et al., "Evolving Mario levels in the latent space of a DCGAN", GECCO, ACM, 2018
- M. González-Duque, et al., "Mario plays on a manifold: Generating functional content in latent space through differential geometry", Conference on Games (CoG), 2022

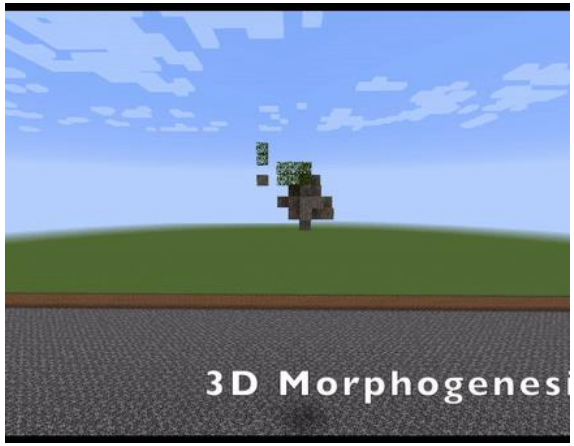
Selected projects, funded by the European Commission or national agencies

- INNATE "Adaptive Machines for Industrial Automation", DFF Sapere Aude, 2020-2024
- QD2L "Improving Generalisation in Deep Learning through Quality Diversity", DFF Project 1, 2020-2023
- Flora Robotica "Societies of Symbiotic Robot-Plant Bio-Hybrids as Social Architectural Artifacts", FET Proactive, 2015-2019

Related study programmes, doctoral or master levels

- MSc in Games, IT University of Copenhagen


IT-UNIVERSITETET I KØBENHAVN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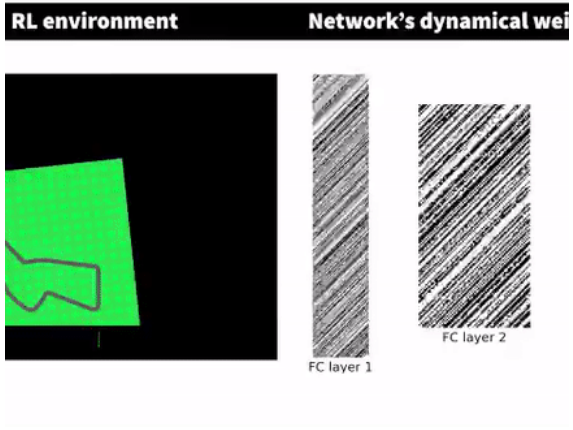
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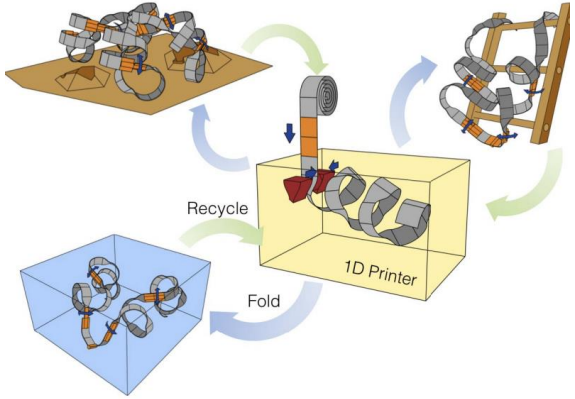
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Unit name:

ELLIS unit Copenhagen

Director(s):

Prof. Ole Winther

Coordinating organization(s):

Technical University of Denmark (DTU)

University of Copenhagen (UCPH)

IT University of Copenhagen (ITU)

Contact information:

Introduction:

The ELLIS Unit Copenhagen consists of machine learning faculty from Technical University of Denmark (DTU), University of Copenhagen (UCPH) and the IT University of Copenhagen (ITU). Its research agenda is focused on both machine learning methods and applications such as computer vision, health, earth and climate sciences that link to the corresponding ELLIS fellowship programs. Additional application areas are natural language processing (NLP) and material science. The overall mission of the unit is to strengthen machine learning research and innovation, increase the presence and visibility within the European research community and make Europe more competitive internationally.

Link to introduction video

Unit members

Coordination:

- Anders Pall Skött
- Michelle Løkkegaard

Fellows:

- Serge Belongie
- Lars Kai Hansen
- Christian Igel

Scholars:

- Isabelle Augenstein
- Søren Hauberg

Members:

- Desmond Elliott
- Yova Kementchedjhieva
- Niklas Pfister
- Mikkel N. Schmidt
- Sebastian Weichwald
- Veronika Cheplygina
- Jes Frellsen
- Daniel Hershcovich
- Anders Krogh
- Sebastian Risi
- Yevgeny Seldin
- Jun Yang
- Wouter Boomsma
- Line Clemmensen
- Morten Mørup
- Amartya Sanyal
- Anders Søgaard
- Martin Tegner
- Lars Maaløe
- Francisco Câmara Pereira
- Marco De Nadai
- Panagiotis Karras
- Melih Kandemir
- Thomas B. Moeslund
- Pablo Moreno-Muñoz

Affiliated organizations(s):

- Pioneer Centre for Artificial Intelligence

Estonian Centre of Excellence in AI

Research node:
Estonian Centre of Excellence in Artificial Intelligence

Directors:
Assoc. Prof. Meelis Kull

Year of establishment:
2024

Number of researchers:
51-100

Parent organizations:
University of Tartu

Tallinn University of Technology; Cybernetica AS

Contact information:

Topics of expertise

Cognition and AI, automated reasoning and inference, case-based reasoning, commonsense reasoning, computer vision, constraint processing, ethical AI, generative AI, heuristic search, human interfaces, knowledge representation, machine learning, multi-agent systems, natural language processing, planning and action, reasoning under uncertainty

Selected publications, peer-reviewed

- H. Kuulmets, et al., "Teaching llama a new language through cross-lingual knowledge transfer", Annual Conference of the North American Chapter of the Association for Computational Linguistics, 2024
- B.S. Leelar, M. Kull. "Generality-training of a classifier for improved calibration in unseen contexts". ECML PKDD, Springer, 2023
- O. López-Pintado, et al., "Discovery, simulation, and optimization of business processes with differentiated resources" Information Systems, 2024
- T. Alumäe, et al., "Exploring the impact of pretrained models and web-scraped data for the 2022 NIST language recognition evaluation", Proc. INTERSPEECH, 2023
- P. Järv, et al., "Large-scale commonsense knowledge for default logic reasoning", SN Computer Science, 2023
- D. Bogdanov, et al., "Artificial Intelligence system risk management methodology based on generalized blueprints", CyCon, NATO CCDCOE Publications, 2024

Selected projects, funded by the European Commission or national agencies

- "Contextual uncertainty and representation learning in machine perception", Estonian Research Council (grant no. PRG1604), 2022-2026
- PIX "The Process Improvement Explorer: Automated Discovery and Assessment of Business Process Improvement Opportunities", ERC Advanced (grant no. 834141), 2019-2024
- CHESS "Cyber-security Excellence Hub in Estonia and South Moravia", Horizon Europe (grant no. 101087529), 2023-2026
- STORE "Shared daTabase for Optronics image Recognition and Evaluation", European Defence Fund grant, 2023-2026

Related study programmes, doctoral or master levels

- PhD programme in Computer Science, MSc programmes, University of Tartu
- PhD programme in Information and Communication Technology, MSc programmes, Tallinn University of Technology


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ADUSARVUTUSTE
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STACC

Industry node:
STACC OÜ

Director:
Kalev Koppel

Company:
STACC OÜ

Year of establishment:
2009

Number of employees:
20-49

Office locations in Europe
Tartu, Estonia

Contact information:

Sectors of expertise:
corporate services, software and IT services

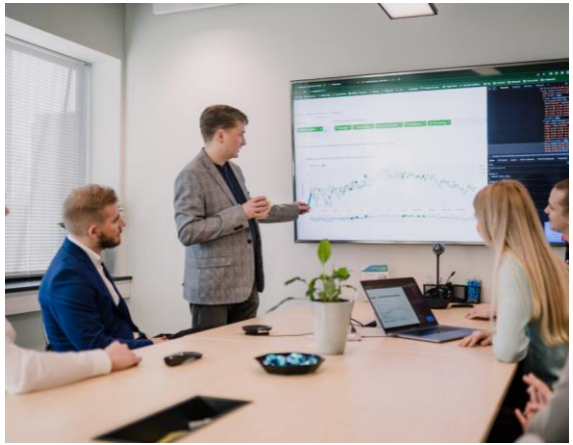
Selected services or products (AI-powered or enabling AI):

- Technical feasibility studies for AI solutions
  - Data analysis, visualisation, and BI dashboard development
  - ML modelling and algorithm development
  - Data pipeline automation and building infrastructure to support ML
  - Software prototyping and information system development
- AI masterclass for company executives
  Leading data scientists from STACC, company's executives and employees analyze when and which business challenges AI could solve to create value. By the end of the masterclass, we complete the company's initial AI implementation roadmap and cost-benefit analysis.

Selected projects, EC or nationally-funded:

- "Data Analytics for Electric Energy Management", co-funded by European Regional Development Fund (grant no EU48684, subproject 1.14), 2023-2024
- "Data Analytics for Supply Chain Management", co-funded by European Regional Development Fund (grant no EU48684, subproject 1.10), 2019-2022.
- MLFPM2018 "Machine Learning Frontiers in Precision Medicine", Horizon 2020 (grant no 813533), 2019-2025
- SoBigData-PlusPlus "SoBigData++: European Integrated Infrastructure for Social Mining and Big Data Analytics", Horizon 2020 (grant no 871042), 2020-2025

Topics of interest:
Machine learning, natural language processing, generative AI



STACC

ARCADA

Research node:
Laboratory for Trustworthy AI

Directors:
Dr. Magnus Westerlund
Dr. Henrika Franck

Year of establishment:
2021

Number of researchers:
1-10

Parent organizations:
Arcada University of Applied Sciences

Contact information:

Topics of expertise

Ethical AI

Selected publications, peer-reviewed

- R. V. Zicari, et al., "Z-Inspection®: A Process to Assess Trustworthy AI" IEEE Transactions on Technology and Society, 2021
- R. V. Zicari, et al., "On Assessing Trustworthy AI in Healthcare. Machine Learning as a Supportive Tool to Recognize Cardiac Arrest in Emergency Calls" Front. Hum. Dyn., 2021
- R. V. Zicari, et al., "Co-Design of a Trustworthy AI System in Healthcare: Deep Learning Based Skin Lesion Classifier" Front. Hum. Dyn., 2021
- B. Düdder, et al., "Ethical maintenance of artificial intelligence systems" Artificial Intelligence for Sustainable Value Creation, Edward Elgar Publishing, 2021

Selected projects, funded by the European Commission or national agencies

- DeployAI "Development and Deployment of the European AI-on-demand Platform", Digital Europe (grant nr. 101146490), 2024-2027
- Manolo "Trustworthy Efficient AI for Cloud-Edge Computing", Horizon Europe (grant no. 101135782), 2024-2026
- FEHLS "Federated Ethical Healthcare Learning Sandbox", Nordic Innovation, 2023-2026
- "AI driven Nordic Health and Welfare", Ministry of Education (grant no. OKM/6/524/2020), 2021-2023

Related study programmes, doctoral or master levels

- MEng in Big Data Analytics, Arcada University of Applied Sciences


Time to shine.

SPINVERSE

Industry node:

ICT & Electronics Team, at the Digital Industries Business Unit

Director:

Dr. Pirjo Pasanen, Director and Team Leader for ICT & Electronics

Company:

Spinverse

Year of establishment:

2004

Number of employees:

50-249

Office locations in Europe

Espoo, Finland; Gothenburg, Sweden

Contact information:

Sectors of expertise:

corporate services, software and IT services

Selected services or products (AI-powered or enabling AI):

- Proposal Preparation Services. We help you explore technologies, partners and funding opportunities: (i) explore innovation opportunities; (ii) experiment new technology with partners; (iii) assess your readiness for open innovation projects; and (iv) identify public funding opportunities for your projects. Public funding instruments include, Horizon Europe (incl. all clusters, European Research Council, European Innovation Council), Chips JU, SNS JU, European Defense Fund, among many others. We also support private investment preparations.
- Ecosystem Building Services. Covers the phases of building, leading and renewing research, innovation and business ecosystems. It starts from creating an ecosystem strategy with objectives and scope, value proposition and partner composition as well as the principles for implementation and the desired impact, thereby setting up a solid foundation for ecosystem building and leading through a strategic action plan. Spinverse facilitates these processes and can also orchestrate the ecosystems on customers´ behalf.
- Project Services & Coordination Office. We work with publicly funded projects to achieve a specific set of goals in the given timeline. These goals are based on technical innovations and create positive business and environmental and societal impact for Europe. The projects we work with range from an individual customer or a few partners collaborating together towards their goal, up to large consortium projects with tens of partners from all across Europe.

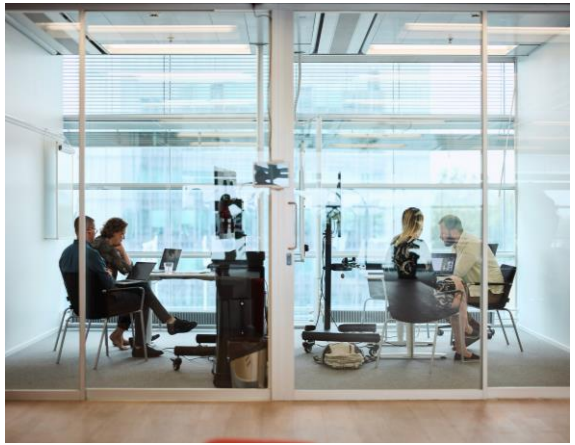
Selected projects, EC or nationally-funded:

- ELISE "European Learning and Intelligent Systems Excellence", Horizon 2020 (grant no. 951847), 2020-2024
- FAMOUS “European Future Highly Mobile Augmented Armoured Systems“, European Defence Industrial Development Programme, 2020-2022
- STARDUST “in vivo optogeneticS, elecTrophysiology and phArmacology with an ultRasonically-powered DUST for Parkinson's Disease “, Horizon 2020 (grant no. 767092), 2017 -2022
- INNPAPER "Innovative and Smart Printed Electronics based on Multifunctionalized Paper: from Smart Labelling to Point of Care Bioplatforms", Horizon 2020 (grant no. 760876), 2018-2021

Topics of interest:

knowledge representation, natural language processing, generative AI






Industry node:
Healthcare, Banking, Energy and Utility

Director:
Kimmo Alkio

Company:
Tietoevry Finland Oy

Year of establishment:
1968

Number of employees:
250+

Office locations in Europe
Espoo, Finland; also, worldwide (20+ countries)

Contact information:

Sectors of expertise:
Tietoevry aims to capture the significant opportunities of the data-driven world and turn them into lifelong value for people, business and society. Tietoevry combines their software and service capabilities with a strong drive for co-innovation and ecosystems. Our transparent and explainable AI solutions help our customers to establish more autonomous business practices. Main focus areas are Health & Care, Energy & utility, Banking, 5G, Forestry and industry.

Selected services or products (AI-powered or enabling AI):

- Healthcare: provides software solutions integrating the care value chain and the right insights in the right context putting citizens and patients at the center of modern health and social care.
- Lifecare Open Platform, Data-driven solutions for health and care, Digital integrated care, Lifecare Resource Optimization-Better care is a matter of time, Social care create value, E-health consulting, Laboratory solutions, Private Healthcare
- Banking: To accelerating digital banking, We provide SaaS solutions for specific domains within banks to make you fit for this ever-changing landscape. Few services are listed below,
  - Transaction banking, Card Services and Processing, Banking-as-a-service, Credit, Open Finance
- Industry: an innovative frontrunner specializing in segment-specific software and data platform services. Our software is designed in close collaboration with our customers and based on our extensive industry knowledge and in-depth expertise.
- Energy & Utility, Public-360-services, Pulp-paper-and-fibre

Selected projects, EC or nationally-funded:

- "Building Trusted Digital Societies", Business Finland (Veturi), 2022-2026
- PHEMS "Pediatric Hospitals as European drivers for multi-party computation and synthetic data generation capabilities across clinical specialties and data types", Horizon Europe (grant no. 101094195), 2023-2026
- Energy ECS "Smart and secure energy solutions for future mobility", Chips Joint Undertaking (grant no. 101007247), 2021-2024
- 5G-TIMBER "Secure 5G-Enabled Twin Transition for Europe's TIMBER Industry Sector", Horizon Europe (grant no. 101058505), 2022-2025

Topics of interest:

Data, AI and cloudification for Healthcare, wellbeing, social services, Banking, Industry (Green energy), 5/6G technology. Metaverse for industry and beyond

Industry node:

ICT & Telecomunications SW

Director:

Dr. Jose Costa-Requena, CEO/CTO

Company:

CUMUCORE

Year of establishment:

2015

Number of employees:

10-49

Office locations in Europe

Espoo, Finland

Contact information:

Sectors of expertise:

Harware and networking, ICT & Telecomunications infrastructre and software

Selected services or products (AI-powered or enabling AI):

- **AI-NWDAF**: The 5G has defined so called Network Data Analytics Function to monitor the status of the 5G core network functions. Cumucore enhanced the NWDAF with AI functionality to collect data that predict and anticipate some recovery actions before a failure of 5G/6G network infrastructure happens. The AI-NWDAF aims to double the current five 9's (i.e. 99,999% uptime) reliability and robustbness of mobile networks.
- **AI-SDN controller**: The transport network is key component for mobile networks in addition to Radio Access Network (RAN) and the 5G Core (5GC) network functions. Cumucore has designed AI-SDN controller that is used to manage transport switches and routers to deliver a reliable tranport network between RAN and 5GC. The transport consists of Ethernet or fibers but 5G private networks require also Wireless technologies as mmWave or TeraHerts point to point radios to be used as transport and Cumucore AI-SDN will handle the management of those as new transport technologies as part of 5GC.
- **Cognitive mobile networks**: Cumucore keeps expanding the 5G core with new network functions that integrate with transport and radio technologies. The Cumucore Network Configuration (CNC) function integrates AI module to discover and optimize the usage of new radio and transport technologies that are incorporated to the mobile infrastructure. Cumucore CNC enhanced with AI transforts normal mobile networks into cognitive sef-configured infrastructure.

Selected projects, EC or nationally-funded:

- TERAWAY "Terahertz technology for ultra-broadband and ultra-wideband operation of backhaul and fronthaul links in systems with SDN management of network and radio resources", H2020 (grant no. 871668), 2019-2023
- TERA6G "TERAhertz integrated systems enabling 6G Terabit-per-second" ultra-massive MIMO wireless networks", Horizon Europe (SNS, grant no. 871668), 2019-2022
- SPRINTER "Low-coSt & energy-efficient hybrid Photonic integrated circuits for fibeR-optic, free-space optIcal and mmWave comm. systems supporting Time critical networking in industrial EnviRonments", Horizon (grant no. 101070581), 2022-2026
- NEMO "Next Generation Meta Operating System", Horizon Europe (grant no. 101070118), 2022-2025

Topics of interest:

Machine learning with multi agent for planning and resource management. Learning and action to impact ESG over mobile networks.

Unit name:
ELLIS unit Helsinki

Director(s):
Prof. Samuel Kaski

Coordinating organization(s):
Aalto University

Helsinki University

Contact information:

Introduction:
The ELLIS unit Helsinki builds on the long tradition and track record of pioneering machine learning research in Finland and seeks to contribute to a concerted European effort in basic research in machine learning. In particular, the unit focuses on (1) Probabilistic modeling and Bayesian inference, (2) Simulator-based inference, (3) Data-efficient deep learning, (4) Privacy-preserving machine learning and (5) Interactive artificial intelligence. The faculty and the operations of the ELLIS unit Helsinki has close links to the Finnish Center for Artificial Intelligence (FCAI) which is a nation-wide center for AI, combining fundamental AI research with a broad range of applied AI research. The ELLIS unit Helsinki will support the FCAI mission to create a new type of AI, which is able to operate with humans in the complex world-and to renew industry.

Link to introduction video **Link to intro video**

Unit members

Coordination:
- Sanna-Maija Kiviranta

Fellows:
- Petri Myllymäki
- Aapo Hyvärinen
- Jaakko Lehtinen
- Guoying Zhao
- Jukka Corander
- Antti Oulasvirta
- Simo Särkkä
- Aki Vehtari

Scholars:
- Arno Solin

Members:
- Teemu Roos
- Ville Kyrki
- Antti Honkela
- Andrea Ganna
- Kai Puolamäki
- Pekka Marttinen
- Laura Ruotsalainen
- Jörg Tiedemann
- Indrė Žliobaitė
- Arto Klami
- Vikas K. Garg

Affiliated organizations(s):
- Finnish Center for Artificial Intelligence (FCAI)


Discontinuously changing distributions

Research node:
Sorbonne Center for Artifical Intelligence-SCAI

Directors:
Prof. Gérard Biau
Dr. Xavier Fresquet

Year of establishment:
2019

Number of researchers:
101+

Parent organizations:
Sorbonne University

Contact information:

Topics of expertise

cognition and AI, automated reasoning and inference, case-based reasoning, commonsense reasoning, computer vision, constraint processing, ethical AI, heuristic search, human interfaces, intelligent robotics, knowledge representation, machine learning, multi-agent systems, natural language processing, planning and action, reasoning under uncertainty

Selected publications, peer-reviewed

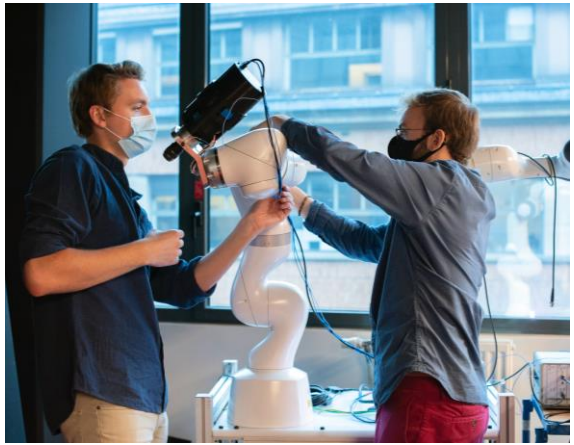
- A. Rame, et al., "Rewarded soups: towards Pareto-optimality by interpolating weights fine-tuned on diverse rewards," Neurips 2023
- A. ImaniGooghari, et al., "Glot500: scaling multilingual corpora and language models to 500 languages" In Proc. ACL, 2023
- I. Ayed, et al., "Modelling spatiotemporal dynamics from earth observation data with neural differential equations". Machine Learning, 2022
- C. Koudoro-Parfait, et al., "Spatial named entity recognition in literary texts: what is the influence of OCR Noise?", GeoHumanities, 2021
- P. Esling, et al., "Universal audio synthesizer control with normalizing flows", DAFx, 2019
- T. Bottini, V Julliard, "Entre informatique et sémiotique. Les conditions techno-méthodologiques d'une analyse de controverse sur Twitter" Réseaux, 2017

Selected projects, funded by the European Commission or national agencies

- SOUND.AI "Sorbonne University for a New Deal on Artificial Intelligence", MSCA Cofund, European Commission (grant no. 101081674), 2023-2027
- Sorbonne.AI "Artificial Intelligence at Sorbonne University", ANR, 2022-2027
- AI4IDF "Human-centered artificial intelligence in Île-de-France", ANR, 2022-2027
- MAESTRIA " Machine learning and Artificial Intelligence for Early Detection of Stroke and Atrial Fibrillation", European Commission (grant no. 965286), 2021-2026

Related study programmes, doctoral or master levels

- Master degree in Mathematics and/or Computer Science (speciality "M2A", "Androide" and "Data Science Paris-DAC"), Sorbonne University
- Doctoral program grouping more than 100 PhD supervisors spread across 20+ laboratories, Sorbonne University

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STAGE 1A


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Unit name:

ELLIS unit Paris

Director(s):

Prof. Gabriel Peyré

Coordinating organization(s):

PRAIRIE intitute, SCAI intitute

DataIA intitute (Université Paris-Saclay)

Hi!Paris intitute (Institut Polytechnique de Paris)

Contact information:

Introduction:

The ELLIS unit Paris will foster exchanges and collaborations both within the Paris area and across Europe. The unit will create a bridge on topics related to AI between the two main geographical locations (Paris center, Paris Saclay) and academic entities (PSL Université, Sorbonne Université, Université Paris-Saclay, Institut Polytechnique de Paris, Université de Paris) and is supported by the two main research agencies CNRS and Inria. The unit will 1) advance fundamental research in AI, in particular in core machine learning and related fields (vision, robotics, NLP), 2) support interdisciplinary research in AI, in particular in physics, health, biology and humanities, and 3) promote open-source software and reproducible research.

Link to introduction video

Unit members

Coordination:

- Sotiria Chatzi

Scholars:

- Rémi Flamary
- Quentin Bouniot
- Bruno Loureiro
- Edouard Oyallon
- Enzo Tartaglione
- Gül Varol

Fellows:

- Giulio Biroli
- Francis Bach
- Isabelle Guyon
- Stephane Mallat
- Cordelia Schmid
- Bertrand Thirion
- Nicolas Vayatis
- Emmanuel Dupoux
- Jean Ponce
- Michèle Sebag
- Florence d'Alché-Buc
- Ivan Laptev
- Christian P. Robert

Members:

- Mathieu Aubry
- Justine Cassell
- Aymeric Dieuleveut
- Stéphane Lathuilière
- David Picard
- Gilles Blanchard
- Matthieu Cord
- Loic Landrieu
- Vincent Lepetit
- Ioana Manolescu
- Florence Tupin
- Debabrota Basu

Affiliated organizations(s):

- PRAIRIE intitute (PSL Université)
- SCAI intitute (Sorbonne Université)
- DataIA intitute (Université Paris-Saclay)
- Hi!Paris intitute (Institut Polytechnique de Paris)


20/21/22 novembre 2023
Dauphine Digital Days
IA & société
« Nouvelle donne, nouveaux enjeux »
Bienvenue !
PR[AI]RIE
PaRis Artificial Intelligence Research InstitutE
scai
SORBONNE CENTER FOR ARTIFICIAL INTELLIGENCE
HEC
INSTITUT POLYTECHNIQUE DE PARIS
Hi! PARIS
PARIS ARTIFICIAL INTELLIGENCE FOR SOCIETY
INSTITUT DATAIA
Science des données, Intelligence & Société
WELCOME!

Research node:
Lab for Artificial Intelligence in Medical Imaging (AI-Med)

Directors:
Prof. Christian Wachinger

Year of establishment:
2017

Number of researchers:
1-10

Parent organizations:
Technical University of Munich

Ludwig Maximilian University of Munich

Contact information:

Topics of expertise

cognition and AI, computer vision, machine learning

Selected publications, peer-reviewed

- F. Bongratz, et al., "Vox2Cortex: fast explicit reconstruction of cortical surfaces from 3D MRI scans with geometric deep neural networks", IEEE CVPR, 2022
- C. Wachinger, et al., "Detect and correct bias in multi-site neuroimaging datasets," Medical Image Analysis, 2021
- B. Gutierrez, et al., "Discriminative and generative models for anatomical shape analysis on point clouds with deep neural networks", Medical Image Analysis, 2021
- A. Guha Roy, et al., "Bayesian QuickNAT: Model uncertainty in deep whole-brain segmentation for structure-wise quality control", NeuroImage, 2019
- A. Guha Roy, et al., "Recalibrating fully convolutional networks with spatial and channel squeeze & excitation blocks", IEEE Transactions on Medical Imaging, 2018
- C. Wachinger, et al., "Whole-brain analysis reveals increased neuroanatomical asymmetries in dementia for hippocampus and amygdala", Brain, 2016

Selected projects, funded by the European Commission or national agencies

- DeepMentia "Deep Learning for the Differential Diagnosis of Dementia from Multi-Modal Neuroimaging Data", BMBF, Computational Life Sciences, 2020-2023
- CompPop "Computational Population Modelling from Big Medical Image Data", Bavarian Government, 2017-2022
- AbdominalMeshes "Multi-organ Abdominal Segmentation with Mesh-Based Bayesian Neural Networks", DFG, 2022-2025

Related study programmes, doctoral or master levels

- Graduate school, Center for Doctoral Studies in Informatics and its Applications, Technical University of Munich
- Master programme, Biomedical Computing, Technical University of Munich

Alexander von Humboldt Institute for Internet and Society

Research node:
AI & Society Lab

Directors:
Prof. W.Schulz, Prof. J.Hofmann
Prof. T. Schildhauer
Prof. B. Scheuermann

Year of establishment:
2020 (Lab), 2022 (HIIG)

Number of researchers:
1-10

Parent organizations:
Alexander von Humboldt Institute for Internet and Society

Contact information:

Topics of expertise
cognition and AI, ethical AI, machine learning, natural language processing

Selected publications, peer-reviewed

- T. Züger, et al., "Handling the hype: Implications of AI hype for public interest tech projects". TATuP, 2023
- H. Asghari, et al., "On the prevalence of leichte sprache on the German Web", ACM WebSci '23 Conference, 2023
- H. Asghari, F. Hewett. "HIIG at GermEval 2022: best of both worlds ensemble for automatic text complexity assessment", GermEval 2022 Workshop on Text Complexity Assessment of German Text, 2022
- T. Züger, H. Asghari, "AI for the public. How public interest theory shifts the discourse on AI", AI & Soc., 2022

Selected projects, funded by the European Commission or national agencies

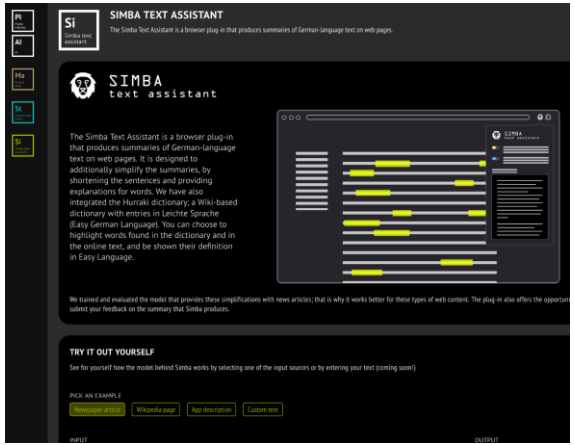
- Public Interest AI research group, BMBF, 2022-2024
- Frauen* im Tech-Sektor, GIZ, 2022-2023

Related study programmes, doctoral or master levels


E


Leslie Jarrín


Ma
Project
Map
CONTRIBUTE
There is a lack of accumulated and detailed data on public interest AI projects, including their specific objectives, methods, and frameworks. This is why we created a survey.
Contribute by filling out the online survey and include your project in this interactive map and directory.
ADD YOUR PROJECT
In view 14/14
Total 17/17


SIMBA TEXT ASSISTANT
SIMBA
text assistant
The Simba Text Assistant is a browser plug-in that produces summaries of German-language text on web pages. It is designed to additionally simplify the summaries, by shortening the sentences and providing explanations for words. We have also integrated the Hurraki dictionary; a Wiki-based dictionary with entries in Leichte Sprache (Easy German Language). You can choose to highlight words found in the dictionary and in the online text, and be shown their definition in Easy Language.
TRY IT OUT YOURSELF
PICK AN EXAMPLE
Newspaper article
Wikipedia page
App description
Custom text

Research node:
TUM Institute for Ethics in Artificial Intelligence

Directors:
Prof. Dr. Christoph Lütge

Year of establishment:
2019

Number of researchers:
11-20

Parent organizations:
Technical University of Munich

Contact information:

Topics of expertise
ethical AI

Selected publications, peer-reviewed

- C. Corrigan, S. Ikonnikova. "A review of the use of AI in the mining industry: insights and ethical considerations for multi-objective optimization", Science Direct, 2024
- L. M. Amugongo, et al., "Operationalising AI ethics through the agile software development lifecycle: a case study of AI-enabled mobile health applications", AI and Ethics, 2023
- M. Geisslinger, et al., "An ethical trajectory planning algorithm for autonomous vehicles", Nature Machine Intelligence, 2023
- A. L. Hunkenschroer, C. Lütge, "Ethics of AI-enabled recruiting and selection: A review and research agenda", Journal of Business Ethics, 2022
- C. Lütge, et al., "AI4People: ethical guidelines for the automotive sector–fundamental requirements and practical recommendations", International Journal of Technoethics, 2021
- A. Kriebietz, C. Lütge, "Artificial Intelligence and human rights: a business ethical assessment", Business and Human Rights Journal, 2020

Selected projects, funded by the European Commission or national agencies

- MELISSA "MobilE artificiaL Intelligence Solution for DiabeteS Adapted care", European Commission, HORIZON (HLTH-2021-DISEASE-04-04), 2022-2026
- AI4EO "Artificial Intelligence for Earth Observation: Reasoning, Uncertainties, Ethics and Beyond", German Federal Ministry of Education and Research (BMBF)

Related study programmes, doctoral or master levels

- Masters of Science and Technology Studies, Technical University of Munich
- Masters of Politics and Technology, Technical University of Munich

▲ Hochschule Harz
Harz University of Applied Sciences

Research node:
Artificial Intelligence Research Group

Directors:
Prof. Dr. Frieder Stolzenburg

Year of establishment:
2003

Number of researchers:
1-10

Parent organizations:
Harz University of Applied Sciences

Contact information:

Topics of expertise

cognition and AI, automated reasoning and inference, commonsense reasoning, computer vision, intelligent robotics, knowledge representation, machine learning, multi-agent systems

Selected publications, peer-reviewed

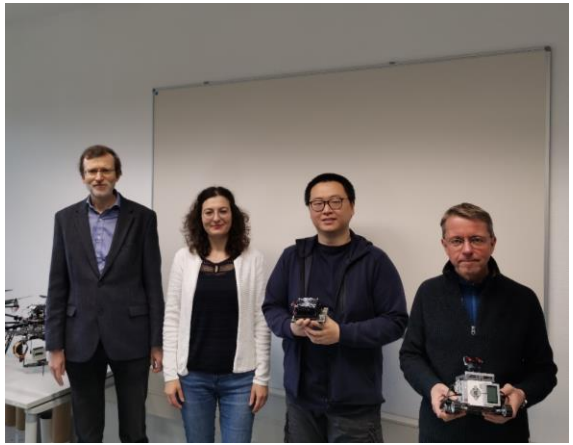
- P. Alirezazadeh, et al., "Improving deep learning-based plant disease classification with attention mechanism", Gesunde Pflanzen, 2023
- P. Alirezazadeh, et al., "A comparative analysis of deep learning methods for weed classification of high-resolution UAV images", Journal of Plant Diseases and Protection, 2023
- S. Krause, F. Stolzenburg. "Commonsense Reasoning and Explainable Artificial Intelligence Using Large Language Models", European Conference on Artificial Intelligence. Cham: Springer Nature Switzerland, 2023
- N. Narisetti, et al., "Deep learning based greenhouse image segmentation and shoot phenotyping (deepshoot)", Frontiers in Plant Science, 2022
- C. Schon, et al., "Negation in cognitive reasoning", KI 2021: Advances in Artificial Intelligence -- 44th German Conference on AI, LNAI. Springer, 2021
- S. Krause, et al., "Fast classification learning with neural networks and conceptors for speech recognition and car driving maneuvers", 14th MIWAI, LNAI 12832, Springer, 2021

Selected projects, funded by the European Commission or national agencies

- AiEng "An interdisciplinary, project-oriented degree program with an educational focus on artificial intelligence and engineering sciences", BMBF (grant no. 16DHBKI010), 2021-2025
- WeedAI "Intelligent UAV-Based Weed Monitoring System for Selective and Site-Specific Herbicide Application", BLE (grant no. 28DK105B20), 2021-2024
- CoRg "Cognitive Reasoning", DFG (grant no. Sto421/8-1), 2018-2021
- Decorating "DEep COnceptors for tempoRal dATa mINinG", DAAD (grant no. DAAD-PPP 57319564), 2017-2018

Related study programmes, doctoral or master levels

- PhD (Dr. rer.nat or Dr.-Ing.) in Engineering and Information Technologies, Harz University of Applied Sciences
- M.Sc. Technology and Innovation Management, Harz University of Applied Sciences



JOINT ARTIFICIAL INTELLIGENCE INSTITUTE

Research node:

Joint Artificial Intelligence Institute

Directors:

Prof. P. Cimiano

Prof.A.Ngonga, Prof.B.Hammer

Prof. H. Wachsmuth

Year of establishment:

2020

Number of researchers:

101+

Parent organizations:

Bielefeld University

Paderborn University

Contact information:

Topics of expertise

Cognition and AI, automated reasoning and inference, computer vision, ethical AI, heuristic search, human interfaces, intelligent robotics, knowledge representation, machine learning, multi-agent systems, natural language processing, planning and action

Selected publications, peer-reviewed

- K. J. Rohlfing, et al., "Explanation as a social practice: toward a conceptual framework for the social design of AI systems". IEEE Trans. Cogn. Dev. Syst., 2021
- D. Caglar, et al., "Convolutional hypercomplex embeddings for link prediction." Asian Conference on Machine Learning, PMLR, 2021
- S. Heindorf, et al., "CauseNet: towards a causality graph extracted from the web". CIKM, 2020
- J. Gaspers, et al., "Constructing a language from scratch: Combining bottom-up and top-down learning processes in a computational model of language acquisition", IEEE Trans. Cogn. Dev. Syst., 2017
- J. Ax, et al., "CoreVA-MPSoC: A many-core architecture with tightly coupled shared and local data memories", IEEE Trans. Parallel Distributed Syst., 2018

Selected projects, funded by the European Commission or national agencies

- TRR318 "Constructing Explainability", Deutsche Forschungsgemeinschaft (Transregional Collaborative Research Centre and Research Training Group), 2021-2025
- DataNinja "Trustworthy AI for Seamless Problem Solving", Ministerium für Kultur und Wissenschaft des Landes Nordrhein-Westfalen (Künstliche Intelligenz / Maschinelles Lernen), 2021-2025
- "RailCampus OWL", Ministerium für Heimat, Kommunales, Bau und Gleichstellung des Landes Nordrhein-Westfalen (REGIONALE 2022), 2020-2024
- MSCA ITN "KnowGraphs", European Commission, Horizon 2020, 2019-2023

Related study programmes, doctoral or master levels

- Ph.D. in Intelligent Systems, Bielefeld University
- Master of Computer Science, Focus Area Intelligence and Data, Paderborn University


ROS

RPTU Rheinland-Pfälzische Technische Universität Kaiserslautern Landau

Research node:
Artificial Intelligence Group

Directors:
Prof. Dr. Andreas Dengel

Year of establishment:
1993

Number of researchers:
21-50

Parent organizations:
Rheinland-Pfälzische Technische Universität Kaiserslautern-Landau

University of Kaiserslautern-Landau

Contact information:

Topics of expertise

cognition and AI, automated reasoning and inference, computer vision, constraint processing, human interfaces, ethical AI, knowledge representation, machine learning, multi-agent systems

Selected publications, peer-reviewed

- C. Geissler, et al., "A functional near-infrared spectroscopy study on the prefrontal correlates of cognitive offloading via a personal knowledge assistant", Scientific Reports, 2023
- F. Mehmood, et al., "Passion-Net: A robust precise and explainable predictor for hate speech detection in roman urdu text", Neural Computing and Applications, Springer Nature, 2023
- A. Guzhov, et al., "Audioclip: extending clip to image, text and audio", ICASSP 2022-2022 IEEE International Conference on Acoustics, Speech and Signal Processing, 2022
- H. Kurshid, et al., "Bacterial prediction using internet of things (IoT) and machine learning, environmental monitoring and assessment", Springer Nature Switzerland, 2022
- C. Edlund, et al., "LIVECELL-A large-scale dataset for label-free live cell segmentation", Nature Methods, Springer Publ. 2021

Selected projects, funded by the European Commission or national agencies

- CurATime-Cluster, "Cluster für Atherothrombose und individualisierte Medizin", (grant no. 03ZU1202*), 2023-2026
- SPELL, "Semantische Plattform zur intelligenten Entscheidungs- und Einsatzunterstützung in Leitstellen und Lagezentren", (grant no. 01MK21005A), 2021-2024
- SensAI, "Self-organizing Personal Knowledge Assistants in Evolving Corporate Memories", Bundesministerium für Bildung und Forschung (grant no. 01IW20007), 2020-2023
- ExplAINN, "Explainable AI and Neural Networks", Bundesministerium für Bildung und Forschung (grant no. 01IS19074), 2019-2022
- XAINES, "KI mit Narrativen erklären", Bundesministerium für Bildung und Forschung (grant no. 01IW20005), 2020-2024

Related study programmes, doctoral or master levels

- Machine Intelligence and Deep Learning Graduate School, University of Kaiserslautern-Landau


REAL TIME STREAMING
ELECTRODERMAL ACTIVITY

cairo.thws
Center for Artificial Intelligence and Robotics
Technical University of Applied Sciences Würzburg-Schweinfurt

Research node:
Center for Artificial Intelligence

Directors:
Prof. Dr. Magda Gregorová

Year of establishment:
2021

Number of researchers:
11-20

Parent organizations:
Technical University of Applied Sciences Würzburg-Schweinfurt

Contact information:

Topics of expertise

automated reasoning and inference, computer vision, intelligent robotics, machine learning, natural language processing, reasoning under uncertainty, generative AI

Selected publications, peer-reviewed

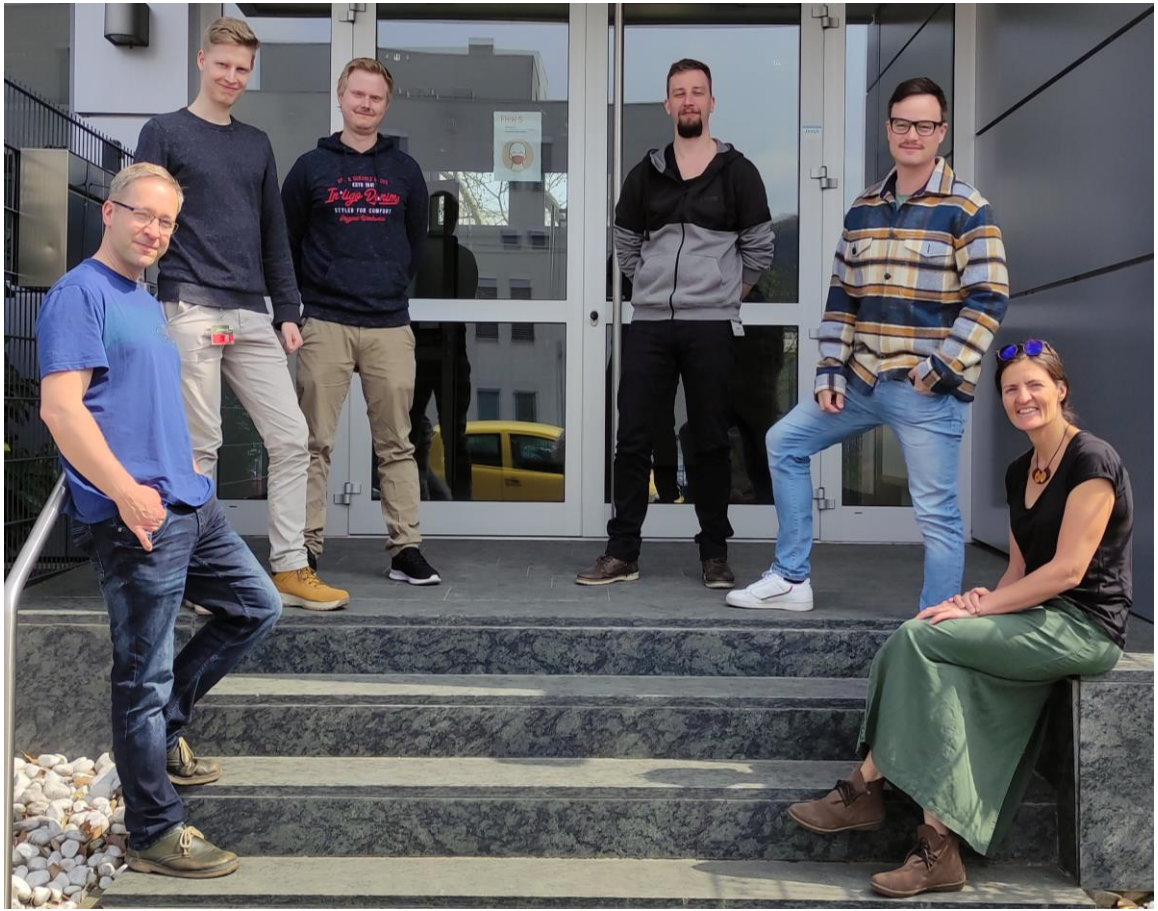
- Y. Boget, et al., "Discrete graph auto-encoder", Transactions on Machine Learning Research, 2024
- M. K. Surkov, I. P. Yamshchikov, "Vygotsky distance: measure for benchmark task similarity", The 2024 Joint International Conference on Computational Linguistics, Language Resources and Evaluation, 2024
- M. Münch, et al.," Unlocking the potential of non-PSD kernel matrices: a polar decomposition-based transformation for improved prediction models", the 32nd ACM International Conference on Information and Knowledge Management, 2023
- V. Holomjova, et al., "GSMR-CNN: An end-to-end trainable architecture for grasping target objects from multi-object scenes", 2023 IEEE International Conference on Robotics and Automation, 2023
- P. Väth, et al., "Diffusion-based visual counterfactual explanations-towards systematic quantitative evaluation", ECML: 5th International Workshop on eXplainable Knowledge Discovery in Data Mining, 2023
- S. Kastner, et al., "SIMUL: Synchronized IMU dataset of walking people at six body Locations", 13th International Conference on Indoor Positioning and Indoor Navigation, 2023

Selected projects, funded by the European Commission or national agencies

- "KI Transfer+", Bavarian State Ministry for Digital Affairs
- "simpleLoc", Indoorlocalization

Related study programmes, doctoral or master levels

- Master's Degree Programme Artificial Intelligence , Technical University of Applied Sciences Würzburg-Schweinfurt



JÜLICH Forschungszentrum
HELMHOLTZ AI

Research node:

Large-Scale Artificial Intelligence for Brain Mapping

Directors:

Prof. Dr. Timo Dickscheid

Dr. Christian Schiffer

Year of establishment:

2020

Number of researchers:

11-20

Parent organizations:

Big Data Analytics Group, Institute of Neuroscience and Medicine (INM-1)

Forschungszentrum Jülich, Germany

Contact information:

Topics of expertise

computer vision, machine learning, high-performance computing, deep learning, representation learning, medical imaging, image reconstruction, generative modelling, image segmentation

Selected publications, peer-reviewed

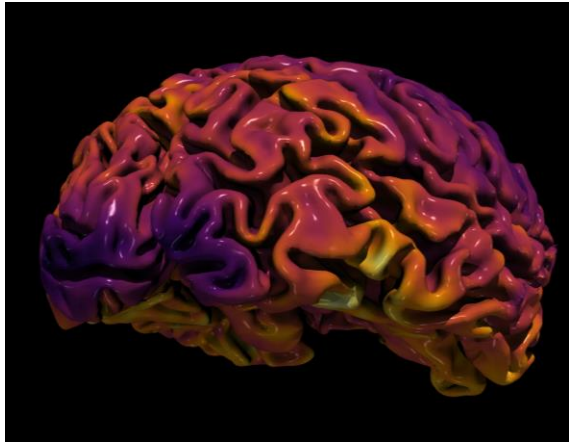
- E. Upschulte, et al., "Uncertainty-aware contour proposal networks for cell segmentation in multi-modality high-resolution microscopy images", NeurIPS Cell Segmentation Challenge in Multi-Modality High-Resolution Microscopy Images, 2023
- E. Upschulte, et al., "Contour proposal networks for biomedical instance segmentation", Medical Image Analysis, 2022
- C. Schiffer, et al., "Contrastive representation learning for whole brain cytoarchitectonic mapping In histological human brain sections.", ISBI, 2021
- C. Schiffer, et al., "Convolutional neural networks for cytoarchitectonic brain mapping at large scale." Neuro Image, 2021
- C. Schiffer, et al., "2D histology meets 3D topology: cytoarchitectonic brain mapping with graph neural networks", Medical Image Computing and Computer Assisted Intervention, 2021
- K. Amunts, et al., "BigBrain: An ultrahigh-resolution 3D human brain model", Science. 2013

Selected projects, funded by the European Commission or national agencies

- "EBRAINS2.0", European Union's Horizon Europe Programme(grant no. 101147319), 2024-2026
- "Human Brain Project (HBP)", European Union's Horizon 2020 Framework Programme for Research and Innovation (grant no. 945539) , 2020-2023
- "Helmholtz International BigBrain Analytics and Learning Laboratory (HIBALL)", Helmholtz Association's Initiative and Networking Fund (InterLabs-0015), 2020-2025
- "Computational Connectomics", Priority Program 2041 (SPP 2041) of the German Research Foundation (DFG), 2021-2024
- "XBRAIN-Cross-modality representation learning for brain analysis and integration", Helmholtz Association's Initiative and Networking Fund through Helmholtz Imaging (grant no. ZT-I-PF-4-061), 2024-2027

Related study programmes, doctoral or master levels

- Master's programme AI and Data Science, Heinrich Heine Universität Düsseldorf
- Master of Science Computer Science, Heinrich Heine University Düsseldorf




JÜLICH

ScaDS.AI
DRESDEN LEIPZIG

Research node:

Center for Scalable Data Analytics and Artificial Intelligence (ScaDS.AI Dresden/Leipzig)

Directors:

Prof. Dr. Wolfgang E. Nagel

Prof. Dr. Erhard Rahm

Year of establishment:

2014

Number of researchers:

101+

Parent organizations:

TUD Dresden University of Technology

Leipzig University

Contact information:

Topics of expertise

cognition and AI, automated reasoning and inference, computer vision, ethical AI, knowledge representation, machine learning, natural language processing

Selected publications, peer-reviewed

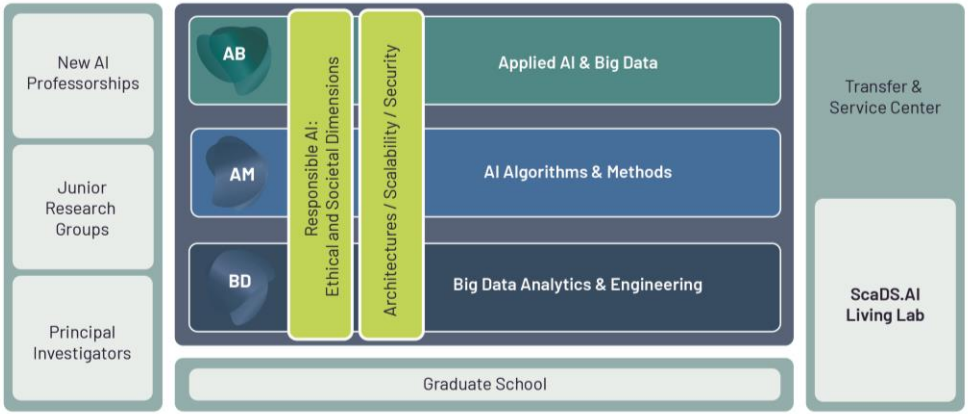
- B. Ten Cate, et al., "SAT-based PAC learning of description logic concepts", Proceedings of the Thirty-Second International Joint Conference on Artificial Intelligence (IJCAI), 2023 (Best Paper Award)
- M. Fröbe, et al., "The Information Retrieval Experiment Platform", 46th International Conference on Research and Development in Information Retrieval (SIGIR), 2023 (Best Paper Award)
- G. Faggioli, et al., "Perspectives on Large Language Models for Relevance Judgment", 2023 ACM SIGIR International Conference on Theory of Information Retrieval (ICTIR), 2023 (Best Paper Award)
- R. Baumann, A. Heine, "On Conflict-free Labellings-Realizability, Construction and Patterns of Redundancy", Proceedings of the 20th International Conference on Principles of Knowledge Representation and Reasoning (KR-23), 2023
- S. A. Gaggl, et al., "Simulating Sets in Answer Set Programming", Proceedings of the 31st International Joint Conference on Artificial Intelligence (IJCAI), 2022
- M. Ghadimi Atigh, et al., "Hyperbolic Busemann Learning with Ideal Prototypes," 35th Conference on Neural Information Processing Systems (NeurIPS), 2021

Selected projects, funded by the European Commission or national agencies

- SECAI "School of Embedded Composite AI ", BMBF and DAAD (grant no. 57616814), 2022-2027
- CERTAINTY "A cellular immunotherapy virtual twin for personalised cancer treatment", Horizon Europe (grant no. 101136379), 2023-2027
- Come2Data "Come2Data", NextGenerationEU, BMBF/VDI, (grant no. 16DKZ2044C), 2023-2026
- OpenWebSearchEU "OpenWebSearch.eu", Horizon Europe(grant no. 101070014), 2022-2025

Related study programmes, doctoral or master levels

- PHD Programme: ScaDS.AI Graduate School
- Master's Programme: Data Science, University of Leipzig & Computational Modelling and Simulation, TU Dresden


New AI Professorships
Junior Research Groups
Principal Investigators
AB
AM
BD
Responsible AI: Ethical and Societal Dimensions
Architectures / Scalability / Security
Applied AI & Big Data
AI Algorithms & Methods
Big Data Analytics & Engineering
Graduate School
Transfer & Service Center
ScaDS.AI Living Lab

Industry node:

Department Business Intelligence, Group Data Science and Advanced Analytics

Director:

Olaf Muth Head of Department,
Dr. Daniel Otten Head of AI,
Dr. Daniel Ludwig, Group Lead Data Science Group

Company:

Debeka

Year of establishment:

1905

Number of employees:

250+

Office locations in Europe

Germany

Contact information:

Sectors of expertise:

Finance, healthcare

Selected services or products (AI-powered or enabling AI):

- **Health Insurance**: Debeka is Germany's largest private health insurance. It offers a comprehensive range of health insurance products, including travel health insurances that provide worldwide coverage, and private supplementary health insurances for various needs such as single-room accommodation or chief physician treatment in hospitals. It has been awarded for exemplary fulfilment of customer wishes.
- **Life Insurance:** Debeka life insurance offers a wide range of life insurance products.
- **Composit Insurance**: As one of the largest German insurers, Debeka offers a wide range of insurance products, including property and casualty insurance as well as commercial insurance.
- **Bausparkasse (Building Society)**: Debeka Bausparkasse offers classic home savings contracts as well as financing products, capital investment products, and real estate services.

Selected projects, EC or nationally-funded:

Topics of interest:

Cognition and AI, machine learning, generative AI


Deloitte


Deloitte


Deloitte

SCANTINEL® PHOTONICS
Scan | Detect | Navigate

Industry node:
Research and Development Unit of Scantinel Photonics

Director:
Dr. Michael Richter, CEO

Company:
Scantinel Photonics

Year of establishment:
2019

Number of employees:
50-249

Office locations in Europe
Ulm, Germany

Contact information:

Sectors of expertise:
transportation and logistics, manufacturing, public safety, agriculture, energy and mining

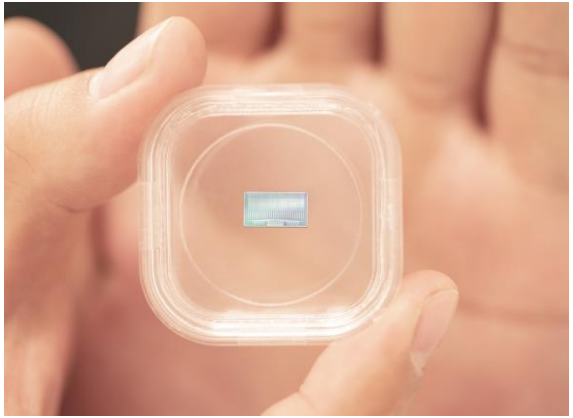
Selected services or products (AI-powered or enabling AI):

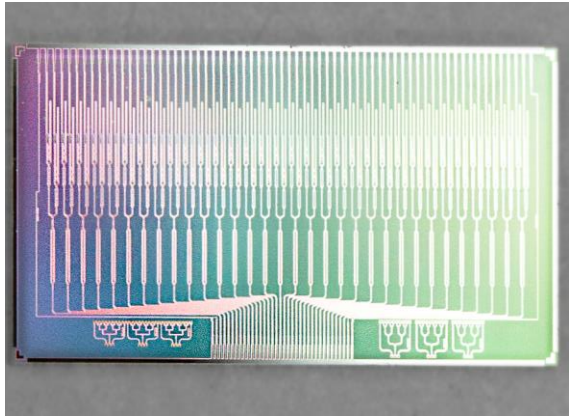
- Scantinel Photonics' FMCW LiDAR Module enhances AI capabilities by enabling 4D mapping, providing high-resolution 3D spatial data alongside velocity information. Its robust design ensures reliable object detection and tracking in all weather conditions. Scantinel's PIC-based FMCW LiDAR supports dynamic path planning and sensor fusion, advancing safety, efficiency, and decision-making in autonomous driving, smart infrastructure, robotics, and more. By integrating optical components on silicon chips, it achieves compact, affordable, and scalable solid-state scanning, offering unparalleled performance and adaptability, surpassing legacy LiDAR systems. Scantinel unlocks new AI capabilities and applications that bulky LiDAR systems cannot support.

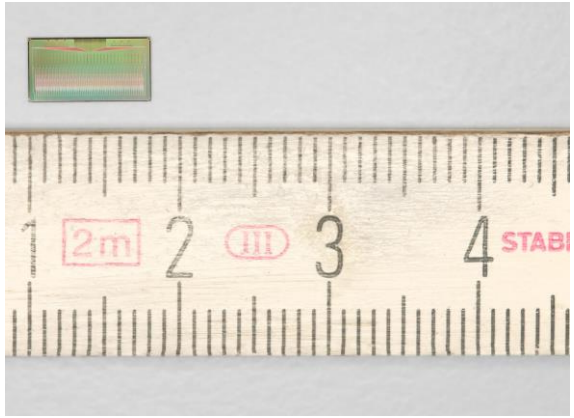
Selected projects, EC or nationally-funded:

- 2 Undisclosed **Industrial** Partners for the integration of Scantinel's FMCW LiDAR technology into industrial applications.
- 2 Undisclosed **Automotive** Tier-1 Partners to incorporate Scantinel's FMCW LiDAR into advanced driver-assistance systems (ADAS) and autonomous vehicle platforms.
- 1 Undisclosed **Truck OEM** Partner to deploy Scantinel's FMCW LiDAR for enhanced truck safety and automation.
- Energy ECS "Smart and Secure Energy Solutions for Future Mobility", Horizon 2021 (grant no. 101007247), 2021-2024

Topics of interest:
cognition and AI, planning and action, intelligent robotics, human interfaces



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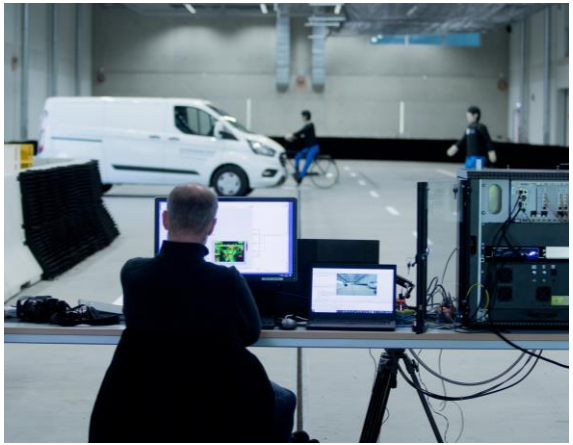



SCANTINEL PHOTONICS
Game Changer for Every Autonomous Journey


WORLDCUP SOCCER

Unit name:
ELLIS unit Berlin

Director(s):
Prof. Dr. Klaus-Robert Müller

Coordinating organization(s):

Contact information:

Introduction:
The goal of the ELLIS unit Berlin is to provide the scientific foundations in the fields of ML and, as a result, advance AI applications to yield a substantial benefit and progress for society, economy, and science. The ELLIS unit Berlin would collaborate with existing projects, such as BIFOLD, BZML, BBDC, MATH+ and the Science of Intelligence clusters of excellence, and multiple graduate schools (Graduiertenkolleg) and collaborative research centers (Sonderforschungsbereich), established by the German Research Foundation (DFG). By cooperating with universities in the Greater Berlin Metropolitan Area (e.g., Charite, FU Berlin, HU Berlin, TU Berlin, University Potsdam), scientific associations and societies as well as institutes of applied research (e.g., acatech, BBAW, DFKI, Fraunhofer, Helmholtz, Leibniz, Leopoldina, Max Planck) as well as...(more at the website)

Link to introduction video

Unit members

Coordination:

Scholars:
- Grégoire Montavon
- Wojciech Samek

Fellows:
- Cédric Archambeau
- Begüm Demir
- Frank Noé
- Thomas Wiegand
- Volker Markl
- Manfred Opper

Members:

Affiliated organizations(s):
- German Research Foundation
- Charite
- FU Berlin
- HU Berlin
- TU Berlin
- University Potsdam
- Acatech
- BBAW
- DFKI
- Fraunhofer
- Helmholtz
- Leibniz
- Leopoldina
- Max Planck

Unit name:
ELLIS unit Darmstadt

Director(s):
Prof. Stefan Roth

Coordinating organization(s):
TU Darmstadt

Contact information:

Introduction:
The ELLIS unit Darmstadt will lay the foundations for intelligent systems that understand context and meaning, and are able to adapt accordingly. The aim is to make computers learn as much about the world, so rapidly and flexibly, as humans. To this end, the research activities of the unit comprise problem areas such as deep (probabilistic) models, hybrid models, physics-aware machine and robot learning, Bayesian (nonparametric) models, (deep and/or inverse) reinforcement learning, probabilistic programming, vision/NLP/robotics, explainable and interactive AI, and human-centric AI.

Link to introduction video https://www.youtube.com/watch?v=WQ7RJW1h2Bs

Unit members

Coordination:

Scholars:

Fellows:

- Jan Peters
- Iryna Gurevych
- Stefan Roth
- Kristian Kersting

Members:

- Georgia Chalvatzaki
- Constantin Rothkopf
- Anna Rohrbach
- Marcus Rohrbach
- Justus Thies

Affiliated organizations(s):

- Technical University of Darmstadt
- Konrad Zuse School of Excellence in Learning and Intelligent Systems (ELIZA)

Unit name:
ELLIS unit Freiburg

Director(s):
Prof. Frank Hutter

Coordinating organization(s):
University of Freiburg

Contact information:

Introduction:
The mission of the ELLIS Unit of the University of Freiburg is to act as one of the best places in Europe on autonomous learning, and to foster European collaborations in the intersection of machine learning, robotics, computer vision and reasoning. The unit has a unique set of outstanding researchers in automated machine learning, robot learning, computer vision, and automated reasoning, and close connections to the industry (e.g., Amazon, Bosch and Toyota). The unit will facilitate collaborations on the intersection of these fields within the ELLIS network, building on highly successful interactions between the respective groups within Freiburg itself. With the recent convergence of much of machine learning, computer vision and robotics under the common theme of deep learning, there are great opportunities for ...(more at the website)

Link to introduction video

Unit members

Coordination:
- Bettina Schug

Scholars:
- Abhinav Valada

Fellows:
- Armin Biere
- Thomas Brox

Members:
- Joschka Boedecker

Affiliated organizations(s):

Unit name:

ELLIS unit Heidelberg

Director(s):

Prof. Dr. Oliver Stegle

Dr. Anna Kreshuk (co-director)

Prof. Dr. Carsten Rother (co-director)

Coordinating organization(s):

German Cancer Research Center (DKFZ)

European Molecular Biology Laboratory (EMBL)

Heidelberg University

Contact information:

Introduction:

The ELLIS Life Unit Heidelberg fosters innovations at the interface of artificial intelligence (AI), machine learning (ML) and the biological and medical sciences. The mission of the unit is to facilitate breakthrough applications of AI/ML, delivering leading-edge analytics to fully exploit the rapidly growing volumes of biomedical data across Europe. The unit conducts foundational research to address key challenges and obstacles for deploying AI in biomedicine. This includes methods to cope with the heterogeneous and often noisy nature of “omics” data and the scarcity of labeled data in medical imaging, algorithms and infrastructures to deal with ethical and privacy constraints of data access, algorithms to infer causal relationships, as well as novel modelling strategies to deliver interpretable, auditable decisions. ... (more on the website)

Link to introduction video

Unit members

Coordination:

- Daniela Beyer

Scholars:

- Anna Kreshuk

Fellows:

- Fred A. Hamprecht
- Wolfgang Huber
- Klaus Maier-Hein
- Lena Maier-Hein
- Carsten Rother
- Oliver Stegle

Members:

- Paul Jäger
- Ullrich Köthe
- Tilman Plehn
- Julio Saez-Rodriguez
- Britta Velten

Affiliated organizations(s):

ellis | UNIT HEIDELBERG AIHealth INNOVATION CLUSTER

AI InScide Out

Advances, Issues, Opportunities

October 16 & 17

Keynotes

SPEAKER
Jennifer Listgarten
Professor of Computational Biology at UC Berkeley

SPEAKER
Karsten Borgwardt
Director, Max Planck Institute of Biochemistry

SPEAKER
Julia Vogt
Assistant Professor in Computer Science at ETH Zürich

Internal Speakers

Paul Jäger
DKFZ

Britta Velten
Uni Heidelberg

Tilman Plehn
Uni Heidelberg

Maria Zimmermann
EMBL

Live @EMBL

Flash Talk Contest | Poster Sessions | Deep Dives

REGISTER YOUR FLASH TALK OR POSTER:
www.indico.dkfz.de/e/ai

Unit name:
ELLIS unit Jena

Director(s):
Prof. Dr. Joachim Denzler

Prof. Dr. Markus Reichstein

Coordinating organization(s):
Max Planck Institute for Biogeochemistry

German Aerospace Center-Institute of Data Science

Friedrich Schiller University Jena

Contact information:

Introduction:
The ELLIS unit Jena is involving two research institutions and the university at the interface between climate/environmental science and machine learning with an emphasis on scientific knowledge integration in and knowledge generation from machine learning approaches. The goal of the ELLIS Unit Jena is thus to combine fundamental development in machine learning with challenges concerning spatio-temporal environmental and climate dynamics for a better understanding of the Earth system and its components. An important aspect here is the integration of knowledge into machine learning methods as appropriate assumptions-this can be qualitative knowledge about causal relationships ("causal modeling") or quantitative knowledge about functional relationships, which can be "cast" into physical, chemical, biological...(more at the website)

Link to introduction video https://ellis.eu/units/jena

Unit members

Coordination:
- Conrad Philipp

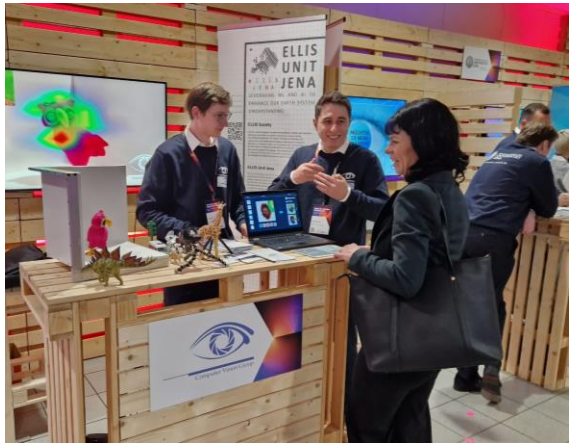
Scholars:
- Jakob Runge
- Nuno Carvalhais

Fellows:
- Markus Reichstein
- Joachim Denzler

Members:
- Ana Bastos
- Joachim Giesen
- Alexander Brenning
- Alexander Winkler

Affiliated organizations(s):
- Thuringian Centre for Learning Systems and Robotics (TZLR)


AI X
SCIENCES
JENA


ELLIS
UNIT
JENA


FRIEDRICH-SCHILLER-
UNIVERSITÄT
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DIGITAL
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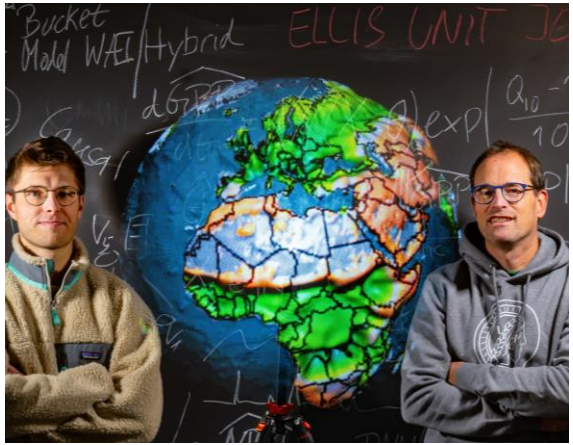
in der Zeitenwende.


Bucket
Model
WAEI
Hybrid
ELLIS UNIT

Unit name:
ELLIS unit Munich

Director(s):
Prof. Dr. Daniel Cremers

Prof. Dr. Fabian Theis

Prof. Massimo Fornasier

Coordinating organization(s):
Technical University of Munich (TUM)

Helmholtz Zentrum München

Contact information:

Introduction:

The ELLIS Munich Unit stands as a nucleus of innovation and collaboration in the field of AI research, particularly focusing on Biomedicine, Computer Vision, and Earth Observation. Specializing in developing innovative machine learning techniques, it brings together expertise from the Technical University of Munich, Helmholtz Munich, and other partners to advance research with a primary emphasis on deploying novel methodologies in transformative applications.

Link to introduction video https://www.youtube.com/watch?v=NsaxwasfBnY

Unit members

Coordination:
- Emma van Holthe
- Arielle Helmick

Scholars:
- Bernd Bischl
- Laura Leal-Taixé
- Barbara Plank
- Angela Dai
- Matthias Nießner
- Stephan Günnemann
- Stefan Bauer
- Holger Rauhut
- Eyke Hüllermeier
- Eric Schulz
- Christian Wachinger
- Nassir Navab

Fellows:
- Mathias Drton
- Stefanie Jegelka
- Björn Ommer
- Daniel Rückert
- Eleftheria Zeggini
- Karsten Borgwardt
- Julia Schnabel
- Volker Tresp
- Xiaoxiang Zhu
- Hinrich Schütze
- Zeynep Akata
- Patrick van der Smagt

Members:
- Vincent Fortuin
- Suvrit Sra
- Stefan Feuerriegel
- Alexander Fraser
- Niki Kilbertus
- Carsten Marr
- Gitta Kutyniok
- Bastian Rieck

Affiliated organizations(s):
- Ludwig-Maximilians-Universität München (LMU)
- Siemens
- Volkswagen Group ML Research


HELMHOLTZ
MUNICH


AI at TU Delft


ellis
DISCUSSION ON FOUNDATION


ellis
European
Laboratory
for Learning and
Intelligent
Systems
-
Munich Unit

Unit name:
ELLIS unit Potsdam

Director(s):
Prof. Sebastian Reich

Dr. Katharina Ladewig

Prof. Dr. Ralf Herbrich

Coordinating organization(s):
Hasso Plattner Institute (HPI)

Contact information:

Introduction:
The ELLIS Unit Potsdam (ELLIS Sustainable Life Potsdam) includes the Hasso Plattner Institute (HPI), the University of Potsdam (UP) and the Center for AI in Public Health Research (ZKI-PH). It aims to advance the development and application of AI algorithms in the areas of sustainability and health. Moving away from fossil fuels to renewables, minimizing energy consumption, personalized medicine, and algorithm-driven analysis of viruses to prevent and mitigate endemics and pandemics are some of today's key challenges. The unit's research agenda therefore covers activities in the fields of AI and Energy, AI for Medicine, Genomics and Infectious Disease, as well as Efficient and Scalable Methods for AI Algorithms.

Link to introduction video

Unit members

Coordination:
- Marija Petrovic

Fellows:
- Ralf Herbrich

Scholars:

Members:
- Gerard de Melo
- Tobias Scheffer
- Christoph Lippert
- Haojin Yang
- Stephan Mandt
- Marina M. C. Höhne
- Patrick Baudisch

Affiliated organizations(s):
- Hasso Plattner Institute (HPI)
- Center for AI in Public Health
- Research (ZKI-PH)
- University of Potsdam (UP)

Unit name:
ELLIS unit Saarbrücken

Director(s):
Prof. Dr. Bernt Schiele

Coordinating organization(s):
Saarland Informatics Campus (SIC)

Contact information:

Introduction:
The ELLIS Unit Saarbrücken brings together 18 PIs from four research institutions of Saarland Informatics Campus (SIC). It comprises the Max Planck Institute of Informatics (MPI-INF), the Max Planck Institute of Software Systems (MPI-SWS), Saarland University (UdS), and the CISPA Helmholtz Center for Information Security (CISPA). The PIs have agreed to jointly work on both the foundations for enhanced functionalities of Artificial Intelligence and Machine Learning (AIML) systems and the pressing needs for security, privacy, and trustworthiness that arise from the widespread use of AIML systems. In the future, these systems will capture reality through a multitude of sensors, interact with humans, derive knowledge, and influence our lives. They will make autonomous decisions and enable enhanced functionalities, ...(more at the website)

Link to introduction video https://youtu.be/CT87VTvCxZg

Unit members

Coordination:
- Connie Balzert

Scholars:
- Isabel Valera
- Jan Eric Lenssen

Fellows:
- Mario Fritz
- Christian Theobalt
- Manuel G. Rodriguez
- Vera Demberg
- Krishna P. Gummadi

Members:
- Aleksandar Bojchevski
- Eddy Ilg
- Krikamol Muandet
- Jilles Vreeken
- Rebekka Burkholz
- Margret Keuper
- Adish Singla
- Mariya Toneva
- Xiao Zhang
- Alexander Koller
- Sebastian U. Stich

Affiliated organizations(s):
- Max Planck Institute for Informatics
- Max Planck Institute for Software Systems
- Saarland University (UdS)
- CISPA Helmholtz Center for Information Security (CISPA)

Unit name:
ELLIS unit Stuttgart

Director(s):
Prof. Dr. Andreas Bulling

Prof. Dr. Ingo Steinwart

Coordinating organization(s):
University of Stuttgart

Max Planck Institute for Intelligent Systems

Contact information:

Introduction:
The Stuttgart ELLIS Unit brings together an interdisciplinary team of PIs at the University of Stuttgart and the Stuttgart site of the Max Planck Institute for Intelligent Systems (MPI-IS). The PIs have joined forces to advance research in learning and intelligent systems from four synergistic perspectives: Interactive Intelligent Systems, Natural and Programming Language Processing, Learning Theory, and Robot Learning.

Link to introduction video

Unit members

Coordination:
- Katrin Fauss

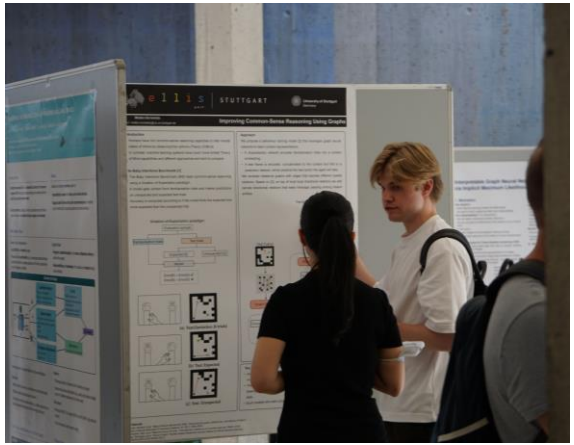
Fellows:

Scholars:
- Katherine J. Kuchenbecker
- Mathias Niepert
- Michael Pradel
- Sabine S. im Walde
- Steffen Staab
- Thang Vu

Members:
- Luiz Chamon
- Alina Roitberg

Affiliated organizations(s):


ELLIS Unit Stuttgart
Kick-Off Event
ELLIS Unit Stuttgart
ellis
STUTTGART


ellis
STUTTGART

Unit name:
ELLIS unit Tübingen

Director(s):
Dr. Matthias Bethge

Dr. Bernhard Schölkopf

Coordinating organization(s):
Tübingen AI Center

Contact information:

Introduction:
The goal of the ELLIS Unit Tübingen is to build a novel public research institution to attract the best scientists to advance AI, train top international students, and generate positive impact in science and society. The research agenda of the unit aims at building learning systems that approach the versatility and robustness exhibited by natural intelligent systems. Machine learning (ML) is at the heart of a technological and societal revolution, yet today's learning systems do not generalize well to new situations, cannot learn from few examples, and do not infer causal relationships. Addressing these deficits and developing robust AI systems will be key to efficient robot teaching and explainable AI and thus help ensure technological leadership and deploying AI systems responsibly and to the benefits of society. Furthermore, the ELLIS...(more at the website)

Link to introduction video

Unit members

Coordination:

Scholars:
- Philipp Berens
- Gerard Pons-Moll

Fellows:
- Philipp Hennig
- Zeynep Akata
- Peter Dayan
- Matthias Hein
- Ulrike von Luxburg
- Andreas Geiger
- Bob Williamson
- Michael J. Black
- Moritz Hardt
- Jakob Macke

Members:
- Seong Joon Oh
- Georg Martius

Affiliated organizations(s):

Artificial Intelligence Information Analysis

Research node:

Artificial Intelligence & Information Analysis Laboratory

Directors:

Prof. Ioannis Pitas

Year of establishment:

1998

Number of researchers:

21-50

Parent organizations:

Aristotle University of Thessaloniki

Contact information:

Topics of expertise

cognition and AI, computer vision, human interfaces , intelligent robotics, machine learning

Selected publications, peer-reviewed

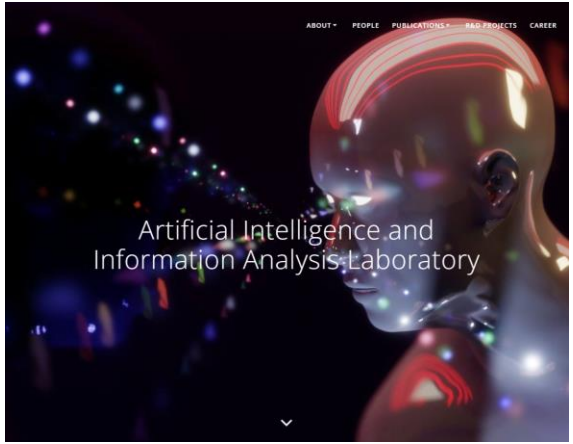
- C. Papaioannidis, et al., "Fast single-person 2D human pose estimation ssing multi-task convolutional neural networks", ICASSP, IEEE, 2023
- C. Symeonidis, et al., "Neural attention-driven non-maximum suppression for person detection", IEEE Transactions on Image Processing, 2023
- I. Mademlis, et al., "Vision-based drone control for autonomous UAV cinematography", Springer Multimedia Tools and Applications, 2023
- C. Papaioannidis, et al., "Fast CNN-based single-person 2D human pose estimation for autonomous systems", IEEE Transactions on Circuits and Systems for Video Technology, 2023
- D. Karamouzas, et al., "Public opinion monitoring through collective semantic analysis of tweets", Springer Social Network Analysis and Mining, 2022
- D. Karamouzas, et al., "Neural knowledge transfer for sentiment analysis in texts with figurative language", IEEE 32nd International Workshop on Machine Learning for Signal Processing, 2022

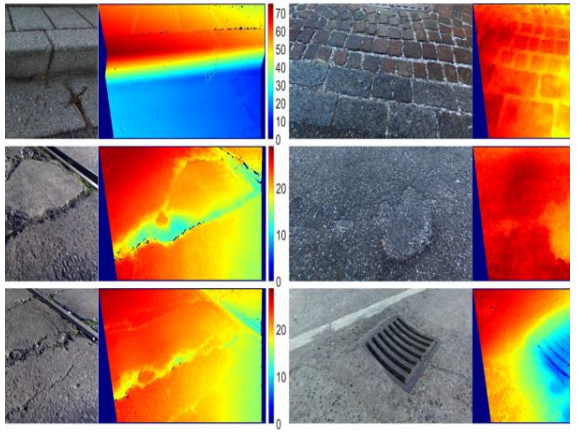
Selected projects, funded by the European Commission or national agencies

- TEMA "Trusted extremely precise mapping and prediction for emergency management", European Commission (grant no. 101093003), 2022-2026
- AI4EUROPE "An AI On-Demand Platform to Support Research Excellence in Europe", European Commission (grant no. 101070000), 2022-2025
- SIMAR "Safe inspection and maintenance supporting workers with modular robots, artificial intelligence, and augmented reality", European Commission (grant no. 101070604), 2022-2025
- AI4Media "A European Excellence Centre for Media, Society and Democracy", European Commission (grant no. 951911), 2020-2024

Related study programmes, doctoral or master levels

- MSc in Digital Media-Computational Intelligence, Aristotle University of Thessaloniki Department of Informatics
- MSc IN Artificial Intelligence, Aristotle University of Thessaloniki Department of Informatics


ABOUT
PEOPLE
PUBLICATIONS
R&D PROJECTS
CAREER
Artificial Intelligence and
Information Analysis Laboratory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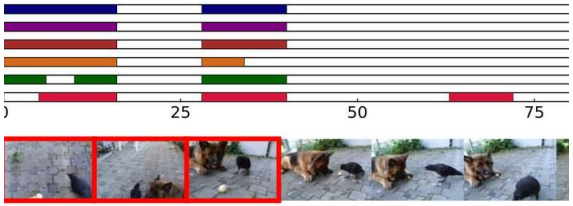
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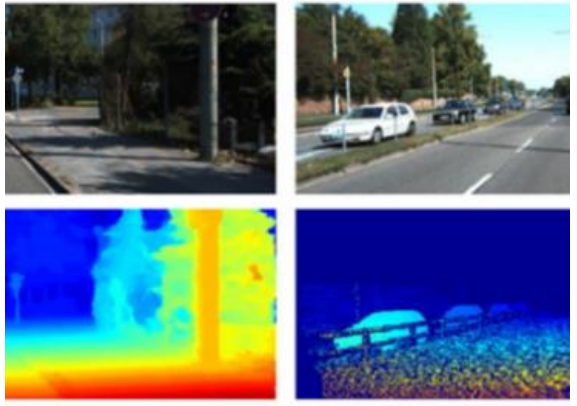

Artificial Intelligence Laboratory
University of Piraeus
Department of Digital Systems

Research node:
Artificial Intelligence Laboratory

Directors:
Prof. George A. Vouros

Year of establishment:
2015

Number of researchers:
11-20

Parent organizations:
University of Piraeus

Department of Digital Systems

Contact information:

Topics of expertise

knowledge representation, machine learning, multi-agent systems

Selected publications, peer-reviewed

- G.Papadopoulos, et al., "Deep reinforcement learning in service of air traffic controllers to resolve tactical conflicts", Expert Syst. Appl. 2024
- G. A. Vouros. "Explainable deep reinforcement learning: state of the art and challenges", ACM Comput. Surv., 2023
- T,Kravaris, et al., "Explaining deep reinforcement learning decisions in complex multiagent settings: towards enabling automation in air traffic flow management", Appl. Intell, 2023
- C. Spatharis, et al., "Hierarchical multiagent reinforcement learning schemes for air traffic management", Neural Computing and Applications. 2023
- A. Kontogiannis, G. Vouros. "Inherently interpretable deep reinforcement learning through online mimicking", EXTRAAMAS, 2023
- A. Bastas, George Vouros. "Data-driven prediction of air traffic controllers reactions to resolving conflicts", Sci. 2022

Selected projects, funded by the European Commission or national agencies

- SHARE "Explainable and Scalable Deep Reinforcement Learning for Human-Agents Collaboration", ELIDEK Grant, 2024-2027
- SIMBAD "Combining Simulation Models and Big Data Analytics for ATM Performance Analysis", H-2020 SESAR Joint Undertaking (grant no. 894241), 2020-2022
- TAPAS "Towards and Automated and exPlainable ATM System", H-2020, SESAR Joint Undertaking (grant no. 89235), 2020-2022
- DART "DART-Data-Driven Aircraft Trajectory Prediction Research ", H-2020, SESAR Joint Undertaking (grant no. 699299), 2016-2018

Related study programmes, doctoral or master levels

- MSc on "Artificial Intelligence", Department of Digital Systems, University of Piraeus
- PhD on "Artificial Intelligence", Department of Digital Systems, University of Piraeus


Planning the path
An
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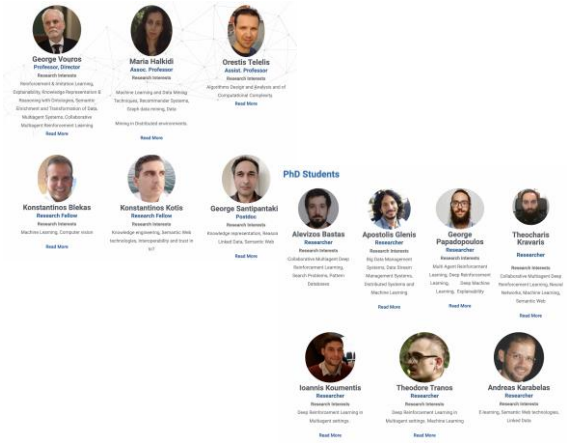
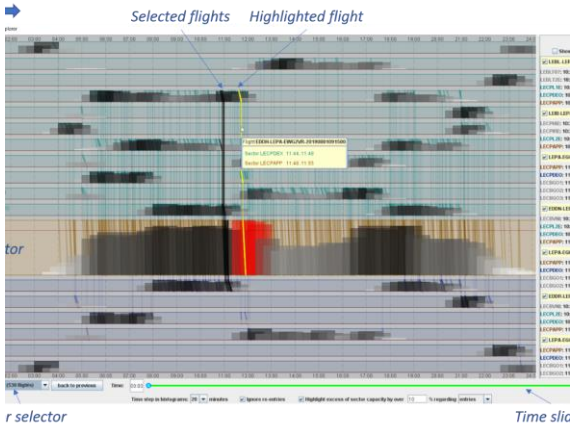
reece


George Vouros
Professor, Director
Maria Halkidi
Assoc. Professor
Orestis Telelis
Assist. Professor
Konstantinos Blekas
Research Fellow
Konstantinos Kotis
Research Fellow
George Santipantaki
PhD Students
Alevizos Bastas
Researcher
Apostolis Glenis
Researcher
George Papadopoulos
Researcher
Theocharis Kravaris
Researcher
Ioannis Koumentis
Researcher
Theodore Tranos
Researcher
Andreas Karabelas
Researcher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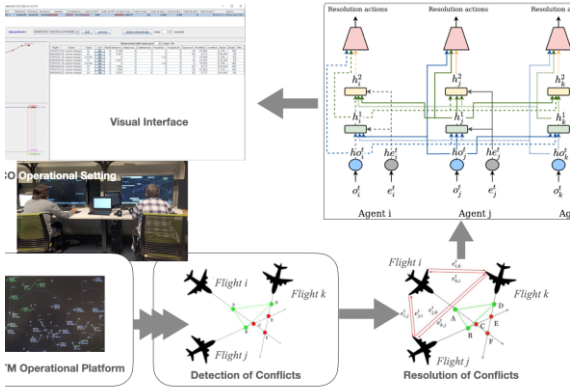
Time slic


Visual Interface
Resolution actions
Agent i
Agent j
Operational Setting
'M Operational Platform
Flight i
Flight k
Flight j
Detection of Conflicts
Resolution of Conflicts

TNMΣ/AISE

Research node:

Artificial Intelligence and Systems Engineering Lab

Directors:

Prof. Nikolaos Vidakis

Year of establishment:

2015

Number of researchers:

11-20

Parent organizations:

Hellenic Mediterranean University (HMU)

Department of Electrical & Computer Engineering (ECE)

Contact information:

Topics of expertise

cognition and AI

Selected publications, peer-reviewed

- S. Batsakis, et al., "Neuro Intel: A system for clinical diagnosis of attention deficit hyperactivity disorder (ADHD) ssing Artificial Intelligence", ISCC, 2023
- I. Logothetis, et al., "EduARdo-unity components for augmented reality environments", Information, 2023
- S. Ninidakis, et al., "Digital twins for remote ECG monitoring", Springer, 2023
- I. Tsampos, E. Marakakis. "A medical question answering system with NLP and graph database", CEUR Workshop Proceedings, 2023
- G. Vassiliou, et al., "iSummary: workload-based, personalized summaries for knowledge graphs", ESWC, 2023

Selected projects, funded by the European Commission or national agencies

- INVITE "Developing and Innovative Designs for International Virtual and Blended Modalities", Erasmus+ (grant no. 021-1-DK01-KA220-HED-000031Competences145), 2022-2025
- "e.Biofarm-advice", Metro 16-Rural Development Programme of Greece (grant no. Μ16ΣΥΝ2-00313), 2022-2025.
- WATERWAYS "Waterways and Stories on the E4 path and the Geoparks in the East Mediterranean", Interreg V-A (grant no. MIS 5048529), 2021-2023
- "RECOMBINE", European Commission, H2020, 2020-2025

Related study programmes, doctoral or master levels

- Doctoral program, Department of ECE,HMU
- Master in Informatics Engineering, Department of Electrical & Computer Engineering, HMU

Artificial Intelligence

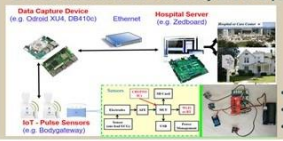
- Knowledge Representation
- Reasoning
- Machine Learning – Data Mining
- Natural Language Processing

- Intelligent Agents
- Logic Programming
- Meta-programming

Educational Technology

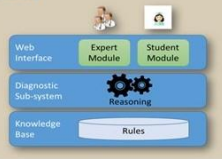
- Digital Learning Platforms
- Instructional Design & eLearning
- Educational Standards
- Assessment / Learning Analytics
- Open and Distance Learning
- Lifelong training
- Collaborative & Social Learning
- Usability Engineering / Evaluation

Embedded Real-Time Systems (E-Health, IIoT, Transportation)



- Develop Cyber-Physical Systems
- Mixed Criticality (Linux & RTOS)
- Embedded security, safety, reliability

Medical Informatics

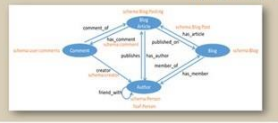


- Decision Support Systems
- Knowledge-based systems
- Electronic Health Record
- Telehealth Services

Serious Games

- Developing games
- Game-based learning
- Inclusive design
- Serious Games
- Assistive technologies
- Playful Interaction
- Multimodal Sensing
- Natural User Interfaces
- Educational Virtual environments / ecosystems

Web Technology



- Ontologies
- Knowledge Engineering
- Description logic
- Resource description framework
- Web ontology Language
- Rules

HELLENIC REPUBLIC
National and Kapodistrian University of Athens
EST. 1837

Research node:
Artificial Intelligence Team

Directors:
Prof. Manolis Koubarakis

Year of establishment:
2005

Number of researchers:
11-20

Parent organizations:
National and Kapodistrian University of Athens

Contact information:

Topics of expertise

Human interfaces, knowledge representation, machine learning, natural language processing

Selected publications, peer-reviewed

- K. Bereta, et al., "The Copernicus app lab project: Easy access to Copernicus data", Proceedings of the International Conference on Extending Database Technology, pp. 501-511, 2019
- C. Nikolaou, et al., "Sextant: Visualizing time-evolving linked geospatial data", Journal of Web Semantics, 2015
- K. Bereta, M. Koubarakis, "Ontop of geospatial databases", International Semantic Web Conference, 2016
- K. Kyzirakos, et al., "Strabon: A semantic geospatial DBMS", International Semantic Web Conference, 2012
- K. Kyzirakos, et al., "GeoTriples: a Tool for Publishing Geospatial Data as RDF Graphs Using R2RML Mappings", International Semantic Web Conference, 2014
- D. Punjani, et al., "Template-Based Question Answering over Linked Geospatial Data", Workshop on Geographic Information Retrieval, 2018

Selected projects, funded by the European Commission or national agencies

- DeepCube "Explainable AI Pipelines for Big Copernicus Data", European Commission (grant no. 951911), 2021-2023
- AI4Copernicus "Reinforcing the AI4EU Platform by Advancing Earth Observation Intelligence, Innovation and Adoption", European Commission (grant no. 101016798), 2021-2023
- TAILOR "Trustworthy AI-Integrating Learning, Optimisation and Reasoning", European Commission (grant no. 952215), 2020-2023
- ExtremeEarth "Big data technologies and extreme scale analytics", European Commission (grant no. 825258), 2019-2021

Related study programmes, doctoral or master levels

- Ph. D. in Informatics and Telecommunications, National and Kapodistrian Universtity of Athens
- M. Sc. In Data Science and Information Technologies, National and Kapodistrian Universtity of Athens


FOOD SECURITY USE CASE
EXTREME


SPACE
BOSCH
SIEMENS
cisco
Partner


How do we Implement Query Processing for RDF?
CIKM 2018

Research node:

Artificial Intelligence Group (AI Group)

Directors:

Prof. Ioannis Hatzilygeroudis

Year of establishment:

2010

Number of researchers:

1-10

Parent organizations:

University of Patras

Contact information:

Topics of expertise

Automated reasoning and inference, case-based reasoning, intelligent robotics, knowledge representation, machine learning, natural language processing, planning and action, reasoning under uncertainty

Selected publications, peer-reviewed

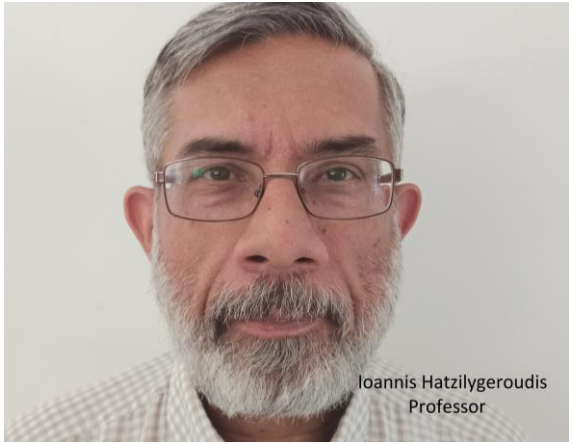
- J. Prentzas, I. Hatzilygeroudis, "Assessment of Life Insurance Applications: An Approach Integrating Neuro-Symbolic Rule-Based with Case-Based Reasoning", Expert Systems, 2016
- I. Perikos, et al., "Automatic Estimation of Exercises Difficulty Levels in a Tutoring System for Teaching the Conversion of Natural Language into First Order Logic", Expert Systems, 2016
- I. Perikos, et al., "Assistance and Feedback Mechanism in an Intelligent Tutoring System for Teaching Conversion of Natural Language into Logic", International Journal of Artificial Intelligence in Education, 2017
- P. Giannopoulos, et al., "Deep learning approaches for facial emotion recognition: A case study on FER-2013", Advances in hybridization of intelligent methods, Springe, 2018
- S. Kardakis, et al., "Examining Attention Mechanisms in Deep Learning Models for Sentiment Analysis", Applied Sciences, 2021
- D. Meimetis, et al., "Real-time multiple object tracking using deep learning methods", Neural Computing and Applications, S.I.: information, intelligence, systems and applications, 2021

Selected projects, funded by the European Commission or national agencies

- TESLA "Virtual Reality as an Innovative and Immersive Learning Tools for HEIs in Palestine", European Commission (grant no. 585772-EPP-1-2017-1-PS-EPPKA2-CBHE-JP), 2017-2021
- Biz4Fun "Let's have fun with the business start-up", European Commission (grant no. 2018-1-SK01-KA202-046271), 2018-2021
- AGRIENT "Enhancing Youth Entrepreneurship Skills, Careers Guidance and Competences in Agriculture Thought a Game based Virtual Reality Platform", European Commission (grant no. 2018-1-SK01-KA202-046271), 2019-2022
- NET "New Approach in Educational Technology", European Commission (grant no. 2019-1-SK01-KA201-060658), 2020-2022

Related study programmes, doctoral or master levels

- MSc on Data Driven Computing and Decision Making (in Greek), University of Patras


Ioannis Hatzilygeroudis
Professor


Dr. Isidoros Perikos


Dr. Konstantinos Chatzilygeroudis


Panagiota Athanasiou
PhD Candidate

GROUP OF COMPANIES

Industry node:

R&D Team, at the Core Network DevOps & Technology Strategy Division

Director:

George Lyberopoulos, Dr.-Ing.
Head of R&D Fixed and Mobile

Company:

Hellenic Telecommunications Organization S.A.

Year of establishment:

1949

Number of employees:

250+

Office locations in Europe

Athens, Greece

Contact information:

Sectors of expertise:

corporate services, design, energy and mining, hardware and networking, public safety, software and IT services, transportation and logistics

Selected services or products:

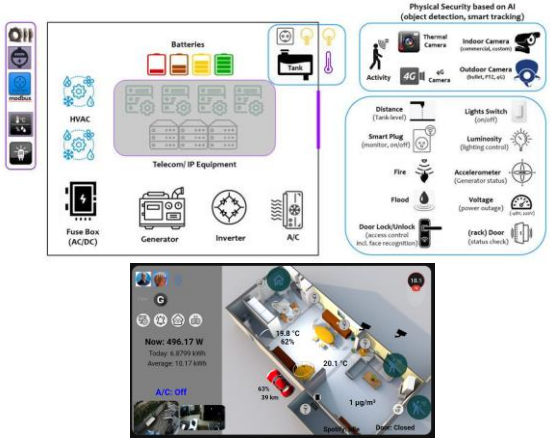
- **SoTA Lab**: Our LeonR&Do Lab is composed of: (a) multi-site NSA and SA 5G e2e testbed based on commercial HW/SW with or w/o satellite backhauling, supporting mmWave access and eCPRI, (b) ICT cloud infrastructure based on Red Hat Openstack with enterprise-level support composed of 10 high-availability nodes, (c) e2e vendor/technology agnostic IoT platform supporting 100s of custom/commercial sensors/integrations, (d) fully scalable to enterprise scale FTTH testbed, (e) GPU server equipped with A10 GPU cards, etc., interconnected to Universities and Research Centers via Gbit links.
- **Datasets for AI processing, incl**.: (a) 1000s of wildlife and wildfire photos, (b) energy, air-quality, environmental, etc. related measurements (for more than 3 years) from at least 30 households and office areas, (c) energy-related measurements from commercial building/telco sites, (d) network statistics at cell/sector-level from commercial network for various access technologies (2G/4G/5G/5G+) and (e) data and control plane data from the LeonR&Do 5G testbed (under certain conditions).
- **AI-based Applications** developed internally, such as: (a) e2e solution for early smoke/wildfire detection by processing live video feed from PTZ IP cameras and drones, incl. webGUI at Control Room and alerting upon event (visual at smartphones/ webGUI, audio/visual at control-room) and (b) physical security solution based on smart object tracking (humans, cars, motorcycles) and LPR by processing live video feed from PTZ IP cameras; triggering events include either object detection (camera) or motion detection (by individual activity detectors).

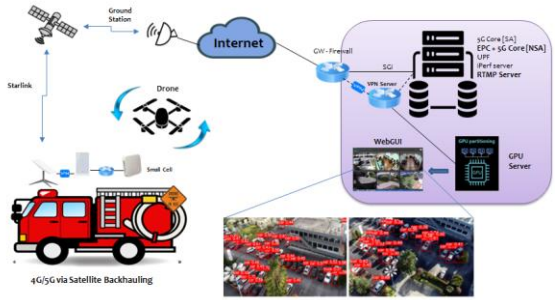
Selected projects, EC or nationally-funded:

- SAFE-CROSSING, "Preventing Animal-Vehicle Collisions", LIFE (grant no. LIFE17NAT/IT/464), 2018-2022.
- aerOS "Autonomous, scalablE, tRustworthy, intelligent European meta Operating System for the IoT edge-cloud continuum", Horizon Europe (grant no. 101069732), 2022-2025.
- 5G-COMPLETE "A unified network, Computational and stOrage resource Management framework targeting end-to-end Performance optimization for secure 5G muLti-tEchnology and multi-Tenancy Environments", Horizon 2020 (grant no. 871900), 2019-2023.
- AEOLUS "An Affordable, miniaturisEd, clOud-connected system powered by Deep Learning algorithms for comprehensive air-quality measurements based on highly integrated mid-IR photonic", Horizon 2020 (grant no. 101017186), 2021-2024.

Topics of interest:

cognition and AI, automated reasoning and inference, computer vision, human interfaces, intelligent robotics, machine learning, multi-agent systems, natural language processing, planning and action, generative AI


Physical Security based on AI
(object detection, smart tracking)
Batteries
Tank
HVAC
Telecom/ IP Equipment
Fuse Box (AC/DC)
Generator
Inverter
A/C
Thermal Camera
Indoor Camera
Activity
4G
Outdoor Camera
Distance
Lights Switch
Smart Plug
Luminosity
Fire
Accelerometer
Flood
Voltage
Door Lock/Unlock
(rack) Door
Now: 496.17 W
A/C: Off
Door: Closed

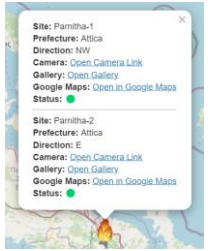

Ground Station
Internet
Starlink
Drone
Small Cell
CW - Firewall
5G
VPN Server
5G Core [SA]
EPC + 5G Core [NSA]
UPF
iPerf server
RTMP Server
WebGUI
GPU Server
4G/5G via Satellite Backhauling


MOBILE
EXCELLENCE


reolink
bear


tensorflow
Attachment


Object-Tracking Window
person: 0.516


Site: Parnitha-1
Prefecture: Attica
Direction: NW
Camera: Open Camera Link
Gallery: Open Gallery
Google Maps: Open in Google Maps
Status:
Site: Parnitha-2
Prefecture: Attica
Direction: E
Camera: Open Camera Link
Gallery: Open Gallery
Google Maps: Open in Google Maps
Status:


COSMOTE
5G


Transport Deployments
COSMOTE

ELTE | IK
DEPARTMENT OF ARTIFICIAL INTELLIGENCE

Research node:
Department of Artificial Intelligence

Directors:
Dr. János Botzheim

Year of establishment:
2021

Number of researchers:
11-20

Parent organizations:
Eötvös Loránd Univeristy-Faculty of Informatics

Contact information:

Topics of expertise

cognition and AI, computer vision, ethical AI, heuristic search, human interfaces, intelligent robotics, machine learning, multi-agent systems, natural language processing

Selected publications, peer-reviewed

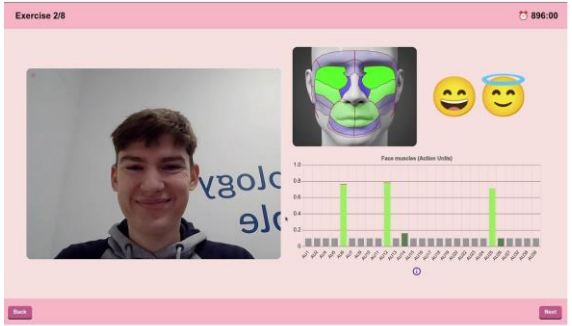
- F. Áron, et al., "Cluster2Former: semisupervised clustering transformers for video instance segmentation", SENSORS 24, 2024
- W. Guettala, L. Gulyás."On the power of graph neural networks and feature augmentation strategies to classify social networks", 16th Asian Conference on Intelligent Information and Database Systems, 2024
- G. Fodor, et al., "BlinkLinMulT. transformer-based eye blink detection", JOURNAL OF IMAGING, 2023
- H. S. Ákos, et al., "Comparison of various mutation operators of the bacterial memetic algorithm on the traveling salesman problem", 15th International Conference on Computational Collective Intelligence, 2023
- B. J. Szekeres, et al., "A ResNet-9 model for insect wingbeat sound classification", IEEE Symposium Series on Computational Intelligence, 2023

Selected projects, funded by the European Commission or national agencies

- HumanE-AI-Net "European network of Human-centered Artificial Intelligence"
- AI-Lab "Artificial Intelligence National Laboratory"
- "Társadalmi Innovációs Nemzeti Laboratórium", Hungary (grant no. TINLAB-RRF-2.3.1-21-2022-00013)
- Apollo2028 "Resilience and mental wellbeing of the health and care workforce", HE (grant no. HLTH-2023-CARE-04-02)
- EMOTIONAL AI For EU-Education (Digital Skills)
- AI EDIH European Digital Innovation Hubs Network-Knowledge Transfer to SMEs

Related study programmes, doctoral or master levels

- Artificial Intelligence specialization in the Computer Science, Master Programme, Eötvös Loránd Univeristy


Exercise 2/8
896:00
Face muscles (Action Units)
Back
Next


BOSCH


BOSCH

UNIVERSITY OF SZEGED

Research node:
SzegedAI

Directors:
Prof. Márk Jelasity
Dr. Richárd Farkas

Year of establishment:
2003

Number of researchers:
1-10

Parent organizations:
University of Szeged

Contact information:

Topics of expertise

commonsense reasoning, computer vision, human interfaces, machine learning, natural language processing, generative AI

Selected publications, peer-reviewed

- D. Zombori, et al., “Fooling a complete neural network verifier”, International Conference on Learning Representations (ICLR), 2021
- G. Berend, “Sparse coding of neural word embeddings for multilingual sequence labeling”, Transactions of the Association for Computational Linguistics, 2017
- L. Tóth, et al., “A speech recognition-based solution for the automatic detection of mild cognitive impairment from spontaneous speech”, 2018
- R. Farkas, “Irrelevancy filtering”, World, Patent no. WO2020212700, 2020
- L. Tóth, et al., "Neurokognitív zavar automatizált felismerése hangminta alapján, Hungary, Patent no. P1900166, 2019

Selected projects, funded by the European Commission or national agencies

- ProsperAMnet “Interreg“ European Commission (ERDF), 2019-2022
- Qlectives “Quality Collectives: Socially Intelligent Systems for Quality”, European Commission (FP7), 2009-2013

Related study programmes, doctoral or master levels

- Doctoral Programme in Computer Science, University of Szeged

Industry node:
365Scores AI

Director:
Yarden Nussbaum, Head of AI

Company:
365Scores

Year of establishment:
2010

Number of employees:
101-250

Office locations in Europe
Tel Aviv, Israel; London, UK; Minsk, Belarus; Belgrade, Serbia; also, Rio de Janeiro, Brazil; Buenos Aires, Argentina; Aman, Jorden

Contact information:

Sectors of expertise:
Entertainment, sports, media, recreation

Selected services or products (AI-powered or enabling AI):

Recommendation system
In the rapidly evolving digital landscape, sports betting applications like 365Scores seek innovative ways to engage users and enhance their experience. Leveraging Machine Learning (ML) in recommendation systems offers a unique opportunity to personalize content, predict user preferences, and optimize engagement strategies.

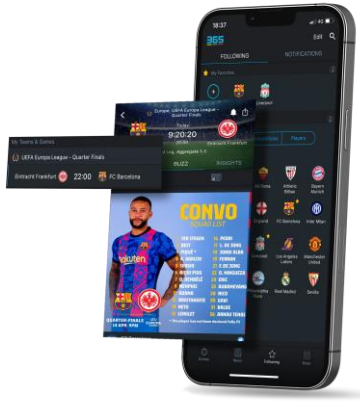
Predicting User Lifetime Value
Understanding and predicting the lifetime value (LTV) of users is crucial for optimizing marketing spend and tailoring user experiences. By integrating advanced Machine Learning (ML) algorithms, the application can analyse vast amounts of data to identify patterns and predict the future behaviour of users. This capability enables the application to forecast the revenue a user may generate throughout their lifetime engagement with the service.

Selected projects, EC or nationally-funded:

Topics of interest:
Automated reasoning and inference; case-based reasoning; machine learning; generative AI


10:24
Freiburg spanked by FC Bayern 4-1
Gnabry - 11 goals in the Bundesliga
MOTM: Gnabry (FC Bayern) - 8.9
Flekken makes 6 saves for Freiburg
75% predicted that FC Bayern (1.5) wins
Palmeiras 16:00 Corinthians
Flamengo 16:00 Vasco da Gama


10:24


CONVO


365 SCORES

Unit name:

ELLIS unit Technion

Director(s):

Prof. Shie Mannor

Coordinating organization(s):

Technion-Israel Institute of Technology

Contact information:

Introduction:

The ELLIS unit Technion is developed as part of the Technion's newly devised "Interdisciplinary Program for Research in Machine Learning and Intelligent Systems" that is formed by the Technion's president to deepen the Technion's commitment to machine learning. The program was recently approved and a budget of $1M was already established. This ELLIS unit Technion serves three main purposes: (i) creates a platform to engage and collaborate in cross faculty projects in machine learning; (ii) coordinates research efforts with the industry to benefit both the Technion and the industry in advancing the reach of machine learning (iii) establishes an international network, with Europe, that will increase the impact of machine learning, via student exchange program, visiting faculty program and holding ELLIS workshops.

Link to introduction video

Unit members

Coordination:

Scholars:

- Yonatan Belinkov
- Roi Reichart

Fellows:

- Alex Bronstein

Members:

- Ofra Amir
- Uri Shalit
- Joachim A. Behar
- Tamir Hazan
- Daniel Soudry

Affiliated organizations(s):

Unit name:
ELLIS unit Tel Aviv

Director(s):
Prof. Amir Globerson

Coordinating organization(s):
Tel Aviv University

Contact information:

Introduction:
The ELLIS unit Tel Aviv covers broad aspects of the field including machine learning theory, natural language processing, machine vision, reinforcement learning and others. The unit will make a concerted effort to advance specific topics such as (1) Vision and Language, (2) Theory of Deep Learning, (3) Privacy and Fairness, (4) Generative Models, and (5) Common Sense Knowledge. The unit further aims at addressing societal challenges that are a new and important aspect of machine learning, as the predictions of algorithms impact humans in a significant way. The unit's research on privacy and fairness has high potential for enabling new technologies that can lead to broader and safer usage of AI in improving a broad range of aspects of society (e.g., healthcare). In addition, the unit is embedded in Israel's flourishing startup community,...(more at the website)

Link to introduction video

Unit members

Coordination:
- Hilla Einy

Scholars:
- Jonathan Berant
- Tomer Koren
- Nadav Cohen

Fellows:
- Amir Globerson
- Lior Wolf
- Yishay Mansour
- Tova Milo

Members:
- Raja Giryes
- Dan Halperin
- Omer Levy
- Hadar Elor
- Yair Carmon
- Tal Wagner
- Daniel Cohen-Or
- Amit Bermano
- Jerome Tubiana
- Mor Pipek

Affiliated organizations(s):


TAD
The Center for AI and Data Science at TAU
Deep Learning Theory Retreat 2024


TAD
The Center for AI and Data Science at TAU
Deep Learning Theory Retreat 2024


ISCOL 2022
Google


Google

AIMH
ARTIFICIAL INTELLIGENCE FOR MEDIA AND HUMANITIES

Research node:

Artificial Intelligence for Media and Humanities

Directors:

Dr. Giuseppe Amato
Dr. F. Falchi, Dr. F. Sebastiani
Dr. V. Bartalesi, Dr. C. Gennaro

Year of establishment:

2020

Number of researchers:

21-50

Parent organizations:

Institute of Information Science and Technologies (ISTI)

National Research Council of Italy (CNR)

Contact information:

Topics of expertise

computer vision, knowledge representation, machine learning, natural language processing, generative AI

Selected publications, peer-reviewed

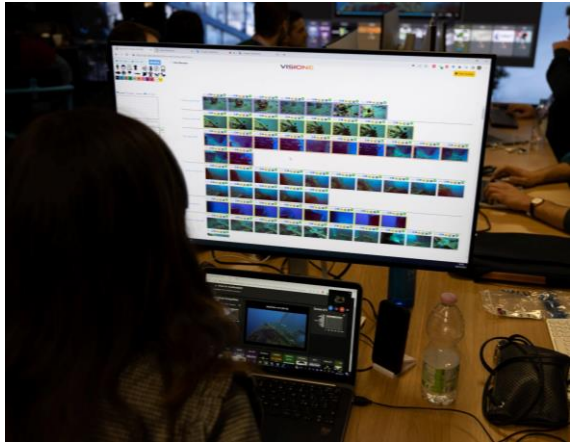
- A. Fabris, et al., "Measuring fairness under unawareness of sensitive attributes: A quantification-based approach", Journal of Artificial Intelligence Research, 2023
- F. V. Massoli, et al., "MOCCA: Multilayer One-Class Classification for Anomaly Detection", IEEE, 2022
- GN. Messina, et al., "Fine-grained visual textual alignment for cross-modal retrieval using transformer encoders", ACM TOMM, 2021
- C. Meghini, et al., "Representing narratives in digital libraries: The narrative ontology", Semantic Web, 2021
- G. Lagani, et al., "Hebbian semi-supervised learning in a sample efficiency setting", Neural Networks, 2021
- A. Esuli, et al., "Cross-lingual sentiment quantification", IEEE Intelligent Systems, 2020

Selected projects, funded by the European Commission or national agencies

- AI4Media "A European Excellence Centre for Media, Society and Democracy", European Commission (grant no. 951911), 2020-2024
- SUN, "Social and hUman ceNtered XR", European Commission (grant no. 101092612), 2022-2025
- FAIR, "Future Artificial Intelligence Research", European Commission, (NextGeneration EU PE00000013), 2022-2025
- AI4EU, "A European AI On Demand Platform and Ecosystem", European Commission (grant no. 825619), 2019-2021

Related study programmes, doctoral or master levels

- Italian National PhD Program in Artificial Intelligence, AI for Society, University of Pisa and others
- Information Engineering, University of Pisa




carbonic anhydrite cylinder
personal protective equipment

UNIMORE
UNIVERSITÀ DEGLI STUDI DI MODENA E REGGIO EMILIA

Research node:
Artificial Intelligence Research and Innovation Center (AIRI)

Directors:
Prof. Rita Cucchiara

Year of establishment:
2011

Number of researchers:
51-100

Parent organizations:
University of Modena and Reggio Emilia

Contact information:

Topics of expertise

cognition and AI, computer vision, ethical AI, human interfaces, intelligent robotics, knowledge representation, machine learning, multi-agent systems, natural language processing, generative AI

Selected publications, peer-reviewed

- M. Cornia, et al., "Fully-attentive iterative networks for region-based controllable image and video captioning.", Computer Vision and Image Understanding, 2023
- M. Cornia, et al., "Generating more pertinent captions by leveraging semantics and style on multi-source datasets", International Journal of Computer Vision, 2023
- A. D'Eusanio, et al., "Depth-based 3D human pose refinement: evaluating the refinet framework", Pattern Recognition Letters, 2023
- G. Bontempo, et al., "A graph-based multi-scale approach with knowledge distillation for WSI classification.", IEEE Transactions on Medical Imaging, 2023
- M. Picone, et al., "A flexible and modular architecture for edge digital twin: Implementation and evaluation." ACM Transactions on Internet of Things, 2023
- M. Boschini, et al., "Class-incremental continual learning into the extended der-verse." IEEE transactions on pattern analysis and machine intelligence, 2022

Selected projects, funded by the European Commission or national agencies

- PERSEO "European Training Network on PErsonalized Robotics as SErvice Oriented applications", European Commission, H2020 Marie Curie Action (grant no. 955778), 2021-2024
- ELSA "European lighthouse on Secure and Safe AI", European Commission, Horizon2020 (grant no. 101070617), 2022-2025
- ELIAS "European Lighthouse of AI for Sustainability", European Commission, Horizon2020 (grant no. 101120237), 2023-2027
- STORE "Shared daTabase for Optronics image Recognition and Evaluation", EDF European Program 2023-2025

Related study programmes, doctoral or master levels

- National doctorate in Artificial Intelligence
- International Doctorate in Information and Communication Technologies and Master Degree in AI Engineering , University of Modena and Reggio Emilia

Research node:
Pervasive Artificial Intelligence Laboratory

Directors:
Prof. Davide Bacciu
Dr. Patrizio Dazzi

Year of establishment:
2020

Number of researchers:
21-50

Parent organizations:
University of Pisa

Italian National Research Council

Contact information:

Topics of expertise

cognition and AI, computer vision, human interfaces, machine learning, natural language processing, generative AI

Selected publications, peer-reviewed

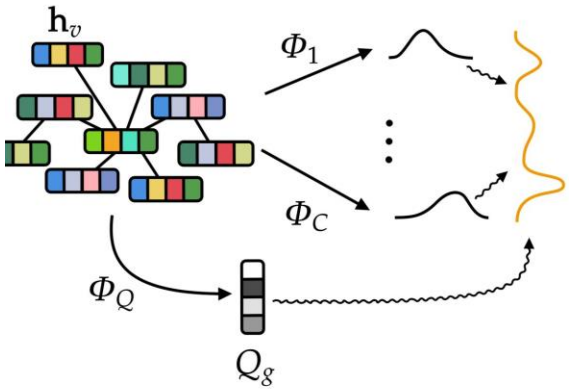
- R Massidda, et al., "Constraint-free structure learning with smooth acyclic orientations", ICLR, 2024
- A Gravina, et al., "Anti-symmetric DGN: a stable architecture for deep graph networks", ICLR, 2023
- D Numeroso, et al., "Dual algorithmic reasoning", ICLR, 2023
- V. Lomonaco, et. al, "Avalanche: An end-to-end library for continual learning", Proc. of CVPRW, 2021
- A. Cossu, et al., "Continual learning for recurrent neural networks: An empirical evaluation" Neural Network, 2021
- D. Bacciu, et al., "A gentle introduction to deep learning for graphs", Neural Networks, 2020

Selected projects, funded by the European Commission or national agencies

- EMERGE "Emergent awareness from minimal collectives", European Innovation Council (grant no. 101070918), 2022-2026
- TEACHING "A computing Toolkit for building Efficient Autonomous appliCations leveraging Humanistic INtelliGence", European Commission (grant no. 871385), 2020-2023
- TAILOR "Foundations of Trustworthy AI-Integrating Reasoning, Learning and Optimization", European Commission (grant no. 952215), 2020-2023
- CoEvolution "A COMPREHENSIVE TRUSTWORTHY FRAMEWORK FOR CONNECTED MACHINE LEARNING AND SECURE INTERCONNECTED AI SOLUTIONS", Horizon EU RIA (grant no. 101168560), 2024-2027

Related study programmes, doctoral or master levels

- Ph.D in Artificial Intelligence, University of Pisa
- M.Sc. in Computer Science, Artificial Intelligence Major, University of Pisa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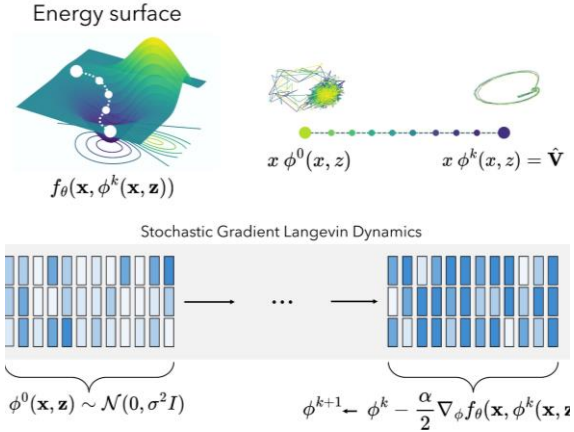
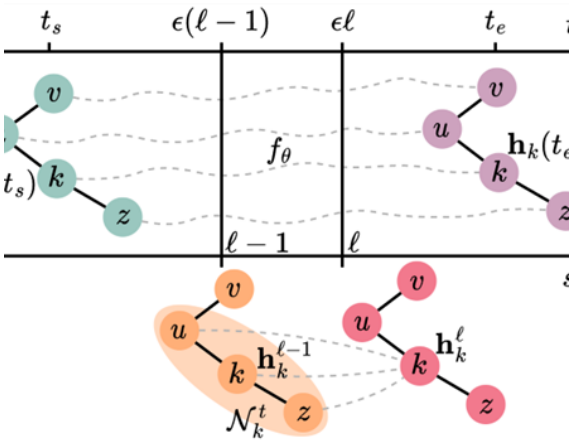
Φ_C
Φ_Q
Q_g


Energy surface
$f_\theta(\mathbf{x}, \phi^k(\mathbf{x}, \mathbf{z}))$
$x\ \phi^0(x,z)$
$x\ \phi^k(x,z) = \hat{\mathbf{V}}$
Stochastic Gradient Langevin Dynamics
$\phi^0(\mathbf{x}, \mathbf{z}) \sim \mathcal{N}(0, \sigma^2 I)$
$\phi^{k+1} \leftarrow \phi^k - \frac{\alpha}{2}\nabla_\phi f_\theta(\mathbf{x}, \phi^k(\mathbf{x},$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ℓ
$\mathbf{h}_k^{\ell-1}$
$\mathbf{h}_k^{\ell}$
$\mathcal{N}_k^t$


Non-Dissipative Propagation by Anti-Symmetric Deep Graph Networks

ALMA MATER STUDIORUM UNIVERSITÀ DI BOLOGNA for Zaky

Research node:

ALMA-AI Alma Mater Research Center for Human-Centered Artificial Intelligence

Directors:

Prof. Michela Milano

Year of establishment:

2020

Number of researchers:

101+

Parent organizations:

University of Bologna

Contact information:

Topics of expertise

Automated reasoning and inference, computer vision, ethical AI, human interfaces, intelligent robotics, knowledge representation, machine learning, multi-agent systems, natural language processing, reasoning under uncertainty

Selected publications, peer-reviewed

- M. Lombardi, M. Milano, A. Bartolini, "Empirical decision model learning". Artif. Intell., 2017
- A. De Filippo, M. Lombardi, M. Milano, "Integrated offline and online decision making under uncertainty", J. Artif. Intell. Res., 2021
- R. Liepina, G. Sartor, A. Wyner, "Arguing about causes in law: A semi-formal framework for causal arguments", Artif. Intell. Law, 2020
- S. Chopra, G. Notarstefano, M. Rice, M. Egerstedt, "A distributed version of the Hungarian method for multirobot assignment", IEEE Trans. Robotics, 2017
- F. Chesani, A. Galassi, M. Lippi, P. Mello, "Can deep networks learn to play by the rules? A case study on nine men's Morris", IEEE Trans. Games, 2018
- A. G. Nuzzolese, V. Presutti, A. Gangemi, S. Peroni, P. Ciancarini, "Aemoo: Linked data exploration based on Knowledge patterns", Semantic Web, 2017

Selected projects, funded by the European Commission or national agencies

- AII4EU and AI4EUROPE, European Commision (H2020 and Horizon Europe, respectively), 2019-2021 and 2022-2024, respectively
- StairwAI, European Commision (H2020), 2021-2023
- TAILOR, European Commision (H2020), 2020-2024
- Human-AI-Net, European Commision (H2020), 2020-2024

Related study programmes, doctoral or master levels

- International Degree in AI
- PhD in Data Science

Research node:

European Centre of Excellence on the Regulation of Robotics & AI

Directors:

Andrea Bertolini

Year of establishment:

2018

Number of researchers:

11-20

Parent organizations:

Sant'Anna, School of Advanced Studies

Contact information:

Topics of expertise

Ethical AI

Selected publications, peer-reviewed

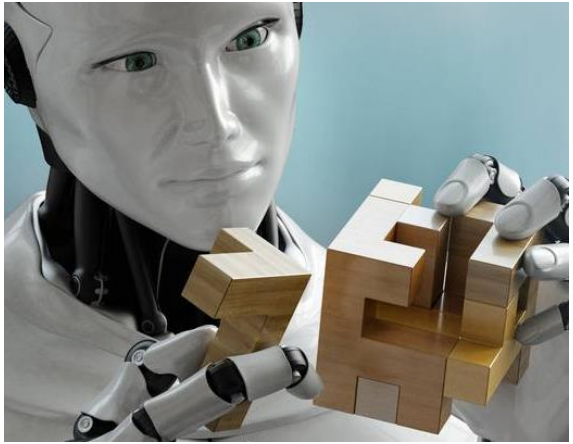
- A. Bertolini, "Artificial Intelligence and civil law: liability rules for drones", Study commissioned by the European Parliament's Policy Dept. for citizens' rights and constitutional affairs at the request of the JURI Committee, PE 608, 2018
- A. Bertolini, et al., "EPRS_STU(2021)656318_EN", European Parliament, 2021
- A. Bertolini, M. Riccaboni, "Grounding the case for a European approach to the regulation of automated driving: the technology-selection effect of liability rules", European Journal of Law and Economics 51.2, 2021
- A. Bertolini, F. Episcopo, "Frontiers | Robots and AI as Legal Subjects? Disentangling the Ontological and Functional Perspective | Robotics and AI", Frontiers in Robotics and AI, 2022
- A. Bertolini, R. Carli, "Human-Robot Interaction and User Manipulation", International Conference on Persuasive Technology, LNCS, Springer, 2022
- A. Bertolini, et al., "Liability of online platforms", European Parliament, 2021

Selected projects, funded by the European Commission or national agencies

- INBOTS, "Inclusive Robotics for a better Society", European Commission (Horizon 2020, grant no. 780073), 2018-2021
- PERSEO, "ETN on PErsonalized Robotics as SErvice Oriented applications", European Commission (Marie Skłodowska-Curie Actions, Horizon 2020, grant no. 955778), 2021-2024
- CONBOTS, "CONnected through roBOTS", European Commission (Horizon 2020, grant no. 871803), 2020-2023
- REGULAITE, Erasmus Plus (grant no. 2021-1-IT01-KA220-VET-000028047)

Related study programmes, doctoral or master levels

- The Regulation of Robotics & AI in Europe: Legal, ethical and economic implications (summer school), EURA, 2022
- The PERSEO Project has started, EURA






Unit name:
ELLIS unit Genoa

Director(s):
Dr. Massimiliano Pontil

Dr. Lorenzo Rosasco

Coordinating organization(s):
Instituto Italiano di Technologia

University of Genoa

Contact information:

Introduction:
The overarching goal of the ELLIS unit IIT & Genoa is to facilitate synergies between machine learning, robotics and the study of natural intelligence. The included research areas are (1) Machine Learning: from DAta to Artificial Intelligence, (2) From Natural to Artificial Intelligence and (3) Robotics: From Intelligence to Action. The mission of the ELLIS unit IIT & Genoa is first to develop foundational research in ML/AI and to strengthen ties with applied research area at IIT and University of Genoa (including Robotics, Natural Intelligence, and ML for Health), cultivating an intellectually stimulating and engaging environment for faculty (PIs), junior researchers, and PhD students working across these areas. The unit also plans to strengthen and expand the research activity in AI Genoa by hiring in key areas such as Human-centric... (more at the website)

Link to introduction video

Unit members

Coordination:
- Anastasia Bruzzone
- Giulia Casu

Scholars:
- Arash Ajoudani
- Luca Oneto
- Alessandra Sciutti

Fellows:
- Vittorio Murino
- Stefano Panzeri
- Lorenzo Natale

Members:
- Ernesto De Vito
- Alessandro Verri
- Giovanni S. Alberti
- Alessio Del Bue
- Daniele Pucci
- Silvia Villa
- Chiara Bartolozzi
- Tommaso Fellin
- Agnieszka Wykowska

Affiliated organizations(s):

Unit name:
ELLIS unit Milan

Director(s):
Prof. Nicolò Cesa-Bianchi

Coordinating organization(s):
Università degli Studi di Milano

Contact information:

Introduction:
The ELLIS unit in Milan brings together excellent researchers from four institutions: Bocconi University, Politecnico di Milano, University of Milan, and University of Milan-Bicocca. The unit is active in several research areas: interactive learning and game theory, statistical learning and non-convex optimization, health and computational biology, natural language processing, computational social sciences, and neural networks in connection with classical AI and neuroscience.

Link to introduction video

Unit members

Coordination:
- Giulia Clerici

Fellows:
- Cesare Alippi
- Sonia Petrone
- Riccardo Zecchina

Scholars:
- Carlo Baldassi
- Gabriella Pasi
- Marcello Restelli
- Francesco Trovò
- Federica Arrigoni
- Nicola Gatti
- Alberto Marchesi
- Paolo Napoletano
- Andrea Paudice
- Roberto Sassi
- Giorgio Valentini

Members:
- Marco Bressan
- Matteo Castiglioni
- Dirk Hovy
- Simone Melzi
- Debora Nozza
- Raimondo Schettini
- Marco Antoniotti
- Simone Bianco
- Marco Buzzelli
- Andrea Celli
- Luca Magri
- Alberto Maria Metelli

Affiliated organizations(s):
- Bocconi University
- Politecnico di Milano
- University of Milan-Bicocca


Ancient
2


Reminders 2
FTRL
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FTRL
duality


GOTRON

Unit name:
ELLIS unit Modena

Director(s):
Prof. Rita Cucchiara

Coordinating organization(s):
UNIMORE

UNIFI

Contact information:

Introduction:
The Modena@ELLIS Unit, directed by prof. Rita Cucchiara, is composed of two research infrastructures: the first at the University of Modena and Reggio Emilia (UNIMORE), with AImageLab and AIRI, the AI Academy and the new NVIDIA NVAITC center established in Modena; the second at the University of Florence (UNIFI) at MICC. Computational grants are provided by CINECA, located in Bologna.

Link to introduction video

Unit members

Coordination:
- Lorenzo Baraldi

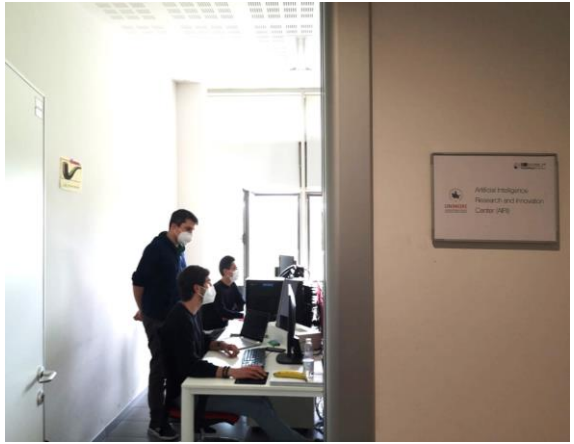
Scholars:
- Lorenzo Seidenari
- Lorenzo Baraldi
- Simone Calderara

Fellows:
- Alberto Del Bimbo
- Rita Cucchiara

Members:
- Costantino Grana
- Simone Calderara
- Roberto vezzani
- Marcella Cornia
- Enver Sangineto

Affiliated organizations(s):
- CINECA


Deep Learning, Vision and Language
for Industry
Corso di Perfezionamento 2022
Università di Modena e Reggio Emilia
Advanced School in Artificial Intelligence Emilia Romagna
Prof. Rita Cucchiara



Unit name:
ELLIS unit Trento

Director(s):
Prof. Bruno Lepri

Prof. Dr. Nicu Sebe

Coordinating organization(s):
University of Trento

Contact information:



Introduction:
The ELLIS Unit Trento connects two research organizations with a longstanding collaboration: the University of Trento and the Fondazione Bruno Kessler. The unit's activities are highly multidisciplinary and comprise both foundational and application-oriented topics. The range of research fields includes: Learning from Visual Data, Bringing Human Diversity in AI, AI for Remote Sensing and Data Fusion, AI for Smart and Secure Cities, AI for Earth, Planets and Climate, Natural Language Processing for Online Safety, as well as Explainable, Trustworthy, and Cooperative AI.

Link to introduction video

Unit members

Coordination:
- Cecilia Zanazzo

Fellows:
- Elisa Ricci

Scholars:
- Francesca Bovolo
- Giovanni Iacca
- Matteo Negri
- Jacopo Staiano
- Yiming Wang

Members:
- Sara Tonelli
- Raffaella Bernardi
- Lorenzo Bruzzone
- Oswald Lanz
- Andrea Passerini
- Paolo Rota
- Cigdem Beyan
- Marco Guerini
- Massimiliano Mancini
- Fabio Poiesi
- Matteo Saveriano
- Wei Wang

Affiliated organizations(s):
- Fondazione Bruno Kessler


JUNE 19-22, 2023
CVPR
VANCOUVER, CANADA
CVPR

Unit name:
ELLIS unit Turin

Director(s):
Prof. Tatiana Tommasi

Coordinating organization(s):
Politecnico di Torino: DAUIN and DET departments

Contact information:

Introduction:
The ELLIS Unit in Turin focuses on learning algorithms and systems for safe and secure sensing machines. We are interested in intelligent machines able to act upon what they perceive, learn from their experience and guide their data acquisition strategy according to their future actions. The Unit, which builds on faculties at Politecnico di Torino, works on visual and multimodal learning, graph learning for sensing and security, cybersecurity, safety in machine learning algorithms and hardware. We closely collaborate with a significant set of industries, representative of the Turin and Italian ecosystem, in automotive, manufacturing and embedded systems.

Link to introduction video

Unit members

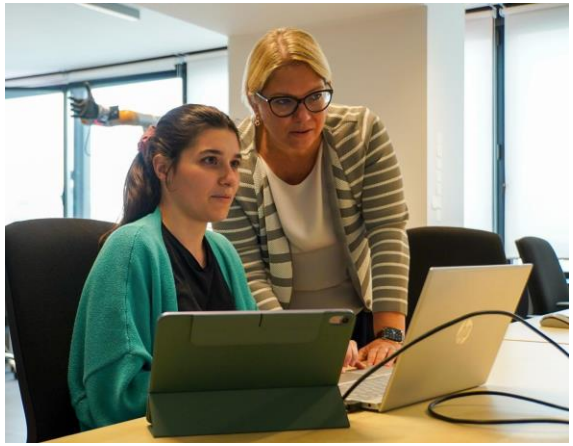
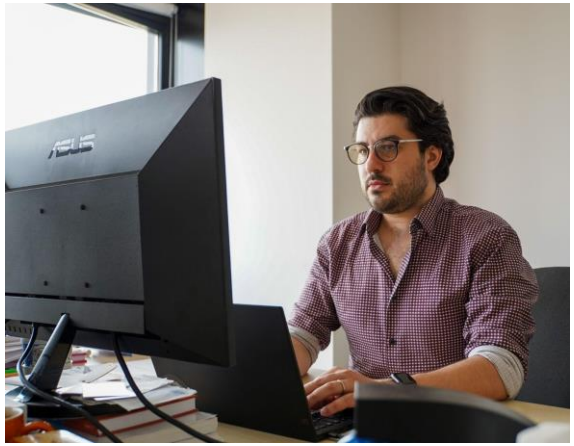
Coordination:
- Alessandra Calosso

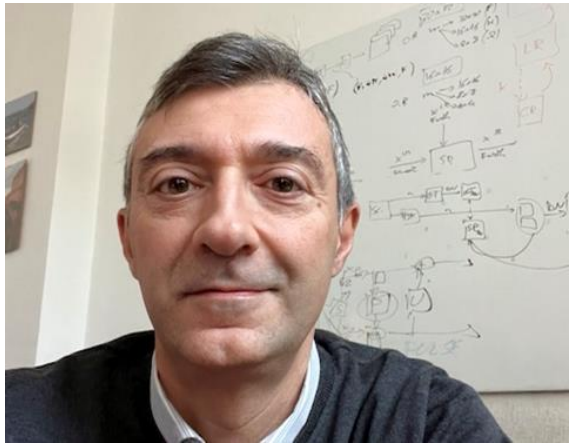
Scholars:

Fellows:
- Barbara Caputo
- Enrico Magli

Members:
- Giuseppe Averta
- Stefano Favaro
- Giuseppe Rizzo
- Raffaello Camoriano
- Giulia Fracastoro
- Diego Valsesia

Affiliated organizations(s):


VANDA


ASUS



links

Digital Pathology and Artificial Intelligence Lab

Research node:

Digital Pathology and Artificial Intelligence Lab

Directors:

Prof. Rimvydas Petrauskas

Prof. Arvydas Laurinavicius

Year of establishment:

2015

Number of researchers:

11-20

Parent organizations:

Vilnius University

Contact information:

Topics of expertise

Cognition and AI, automated reasoning and inference, computer vision, heuristic search, human interfaces, machine learning

Selected publications, peer-reviewed

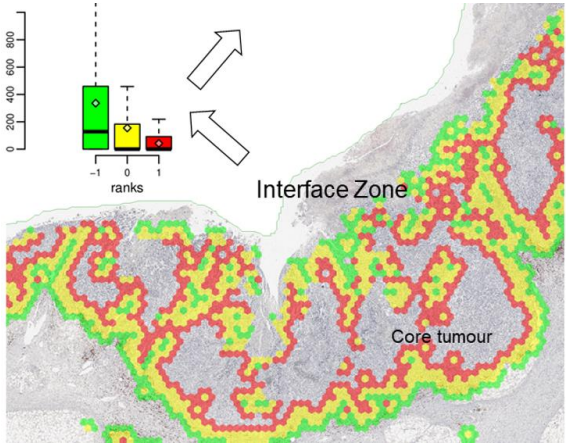
- Rasmusson, et al., "Immunogradient Indicators for antitumor response assessment by automated tumor-stroma interface zone detection", Am. J. Pathol., 2020
- Zilenaite, et al., "Independent prognostic value of intratumoral heterogeneity and immune response features by automated digital IHC analysis in early hormone receptor-positive breast carcinoma"., Front. Oncol., 2020
- Morkunas, et al., "Tumor collagen framework from bright-field histology images predicts overall survival of breast carcinoma patients", Scientific Reports, 2021
- B. Plancoulaine, et al., "Computer-implemented process on an image of a biological sample", International Patent Application, PCT/EP2019/067180, 2020
- A. Laurinavicius, et al., "Automated tumour-stroma interface zone detection for anti-tumour response assessment by immunogradient indicators", International Patent Application PCT/IB2020/053396, 2020

Selected projects, funded by the European Commission or national agencies

- "Artificial intelligence-driven prediction of BCG immunotherapy response in patients with non-muscle invasive papillary urothelial carcinoma", Lithuanian Research Council (grant no. P-MIP-21-249), 2021-2024
- "Deep-Context Tissue Analytics for Integrated Pathology Modelling in Tumors and Kidney Allografts", European Social Fund (grant no. 09.3.3-LMT-K-712-01-0139), 2018-2021
- "Comprehensive Biomarker Intra-Tumour Heterogeneity Evaluation By Digital Immunohistochemistry Image Analysis", European Social Fund (grant no. VP1-3.1-ŠMM-07-K-03-051), 2013-2015

Related study programmes, doctoral or master levels

- Informatics Engineering
- Informatics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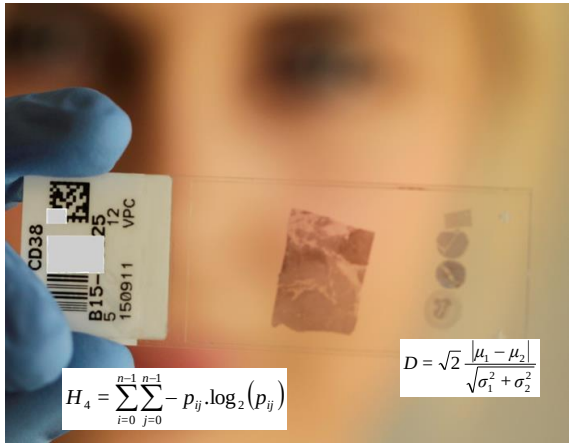
Core tumour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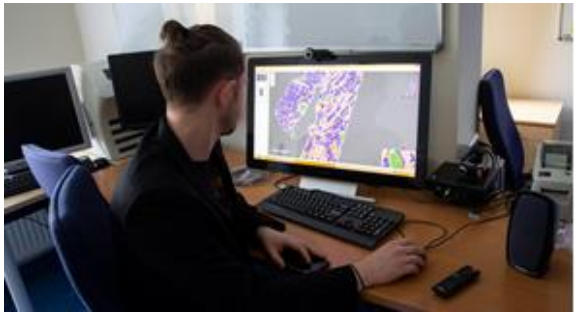
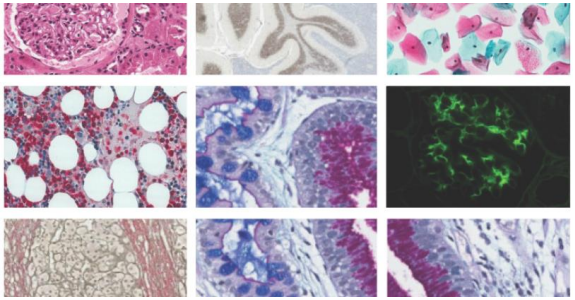
$H_4 = \sum_{i=0}^{n-1}\sum_{j=0}^{n-1} - p_{ij}.\log_2(p_{ij})$
$D = \sqrt{2}\frac{|\mu_1 - \mu_2|}{\sqrt{\sigma_1^2 + \sigma_2^2}}$





L-Università ta' Malta

Research node:

Artificial Intelligence Research Group at the Institute of Digital Games

Directors:

Prof. Georgios N. Yannakakis
Dr. Antonios Liapis
Dr. Ahmed Khalifa

Year of establishment:

2013

Number of researchers:

21-50

Parent organizations:

University of Malta

Contact information:

Topics of expertise

cognition and AI, automated reasoning and inference, computer vision, heuristic search, human interfaces, machine learning

Selected publications, peer-reviewed

- K. Makantasis, et al., "The pixels and sounds of emotion: General-purpose representations of arousal in games", IEEE Transactions on Affective Computing, early access
- J. Liu, et al., "Deep learning for procedural content generation", Neural Computing and Applications, 2021
- D. Gravina, et al., "Procedural content generation through quality diversity", IEEE Conference on Games (CoG), 2019
- G. N. Yannakakis, J. Togelius, "Artificial Intelligence and Games", Springer Nature, 2018
- G. N. Yannakakis, et al., "The ordinal nature of emotions: An emerging approach", IEEE Transactions on Affective Computing, 2018
- G. N. Yannakakis, et al., "Mixed-initiative co-creativity", International Conference on the Foundations of Digital Games (FDG), 2014

Selected projects, funded by the European Commission or national agencies

- AI4Media "A European Excellence Centre for Media, Society and Democracy", European Commission (grant no. 951911), 2020-2024
- LAW-GAME "An Interactive, Collaborative Digital Gamification Approach to Effective Experiential Training and Prediction of Criminal Actions", European Commission (grant no. 101021714), 2020-2024
- PrismArch "Virtual reality aided design blending cross-disciplinary aspects of architecture in a multi-simulation environment", European Commission (grant no. 952002), 2020-2022
- Tamed "Tensor-bAsed Machine learning towards genEral moDels of affect", European Commission (grant no. 101003397), 2020-2022

Related study programmes, doctoral or master levels

- Ph.D. in Game Technology, Game Analysis, and Game Design, University of Malta
- M.Sc. in Digital Games, University of Malta


Matthias Biniok | IBM
AI - Journey, Destination or Vehicle?
game
CEBIT
GAMESMARKT
nordmedia

Process Intelligence RESEARCH

Research node:
Process Intelligence Research AI Lab

Directors:
Prof. Artur Schweidtmann

Year of establishment:
2021

Number of researchers:
11-20

Parent organizations:
Delft University of Technology

Contact information:

Topics of expertise

computer vision, heuristic search, knowledge representation, machine learning, natural language processing, planning and action

Selected publications, peer-reviewed

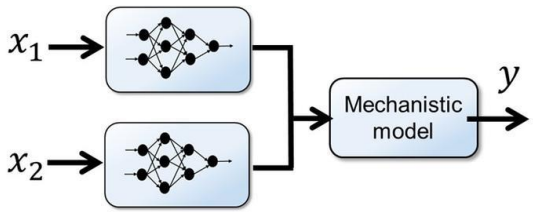
- A. M. Schweidtmann, et al., "Generative artificial intelligence in chemical engineering", Nature Chemical Engineering, 2024
- G. Vogel, et al., "Learning from flowsheets: A generative transformer model for autocompletion of flowsheets", Computers & Chemical Engineering, 2023
- A. M. Schweidtmann, et al., "Machine learning in chemical engineering: A perspective", Chemie Ingenieur Technik, 2021
- A. M. Schweidtmann et al., "Graph neural networks for prediction of fuel ignition quality", Energy & Fuels, 2020
- A. M. Schweidtmann, A. Mitsos, "Deterministic global optimization with artificial neural networks embedded", Journal of Optimization Theory and Applications, 2019
- A. M. Schweidtmann, et al., "Machine learning meets continuous flow chemistry: Automated optimization towards the Pareto front of multiple objectives", Chemical Engineering Journal, 2018

Selected projects, funded by the European Commission or national agencies

- ChemEngKG "The Chemical Engineering Knowledge Graph", Dutch Research Council (NWO), 2021-2022
- CHEME "Chemical Engineering & Medical Imaging AI Lab", Dutch Research Council (NWO), 2021-2026
- "4TU FAIR data Fund", 4TU.Reserachdata, 2022
- "Physics-Informed Neural Networks for Biochemcial Engineering", Bioengineering Institute, 2021

Related study programmes, doctoral or master levels

- MSc Chemical Engineering, Delft University of Technology
- BSc Molecular Science & Technology, Delft University of Technology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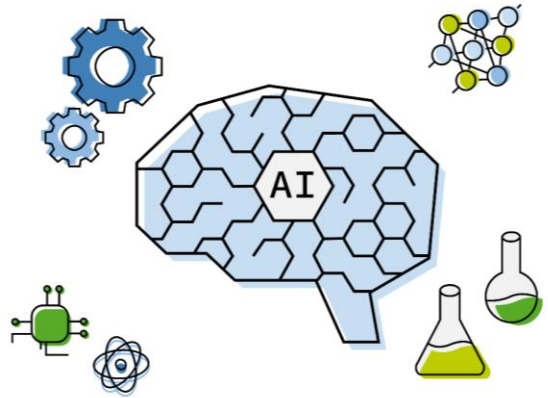
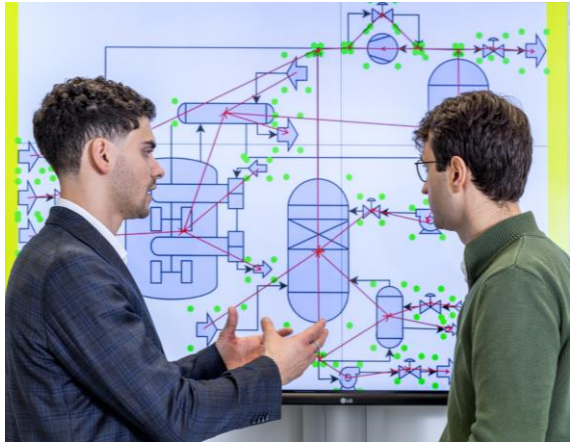
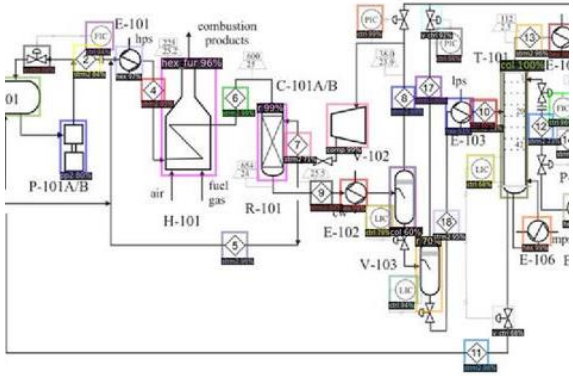

AI

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E-102
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T-101
V-103
E-106
lps

Research node:
Centre of Expertise Applied Artificial Intelligence

Directors:
Dr. Nanda Piersma
Dr. Geert Wissink

Year of establishment:
2020

Number of researchers:
21-50

Parent organizations:
Amsterdam University of Applied Sciences

Contact information:

Topics of expertise

cognition and AI, ethical AI, human interfaces, intelligent robotics, knowledge representation, machine learning, multi-agent systems, natural language processing

Selected publications, peer-reviewed

- K. Rauwerda, et al., "Heuristics in financial decision-making: the selection of SME financing by advisers in an increasingly diverse market", Management Decision, 2021
- M. Fuckner, et al., "Algorithm curation and the emergence of filter bubbles: An ABM approach", ICT.OPEN, 2022 (abstract)
- J. R. Helmus, et al., "A data driven typology of electric vehicle user types and charging sessions", Transportation Research Part C: Emerging Technologies, 2020
- A. Bouwer, et al., "Smart education: Derde projectjaar", Hogeschool van Amsterdam, 2022
- I. Timmer, R. Rietveld, "Rule-based systems for decision support and decision-making in Dutch legal practice. A brief overview of applications and implications", Droit et societe, 2019
- S. Bašić, et al., "Exploring bias in data and models for misinformation detection from text", ICT.OPEN, 2022 (abstract)

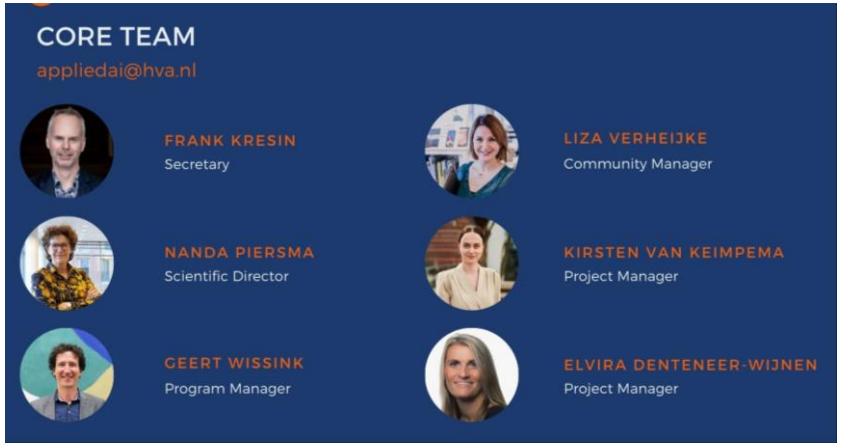
Selected projects, funded by the European Commission or national agencies

- AI, Media en Democratie ELSA Lab, NWO, 2022-ongoing
- AI4students, Comenius Leadership Fellow, 2022-2025
- LESSEN, NWA, 2022-2026
- SPRONG Programma Responsible Applied AI (RAAI), SIA, 2022-2030

Related study programmes, doctoral or master levels

- Master Digital Driven Business, Centre for Market Insights, Amsterdam University of Applied Sciences
- Master Applied Artificial Intelligence, Centre of Expertise AAI, Amsterdam University of Applied Sciences


COE APPLIED AI
Responsible AI Lab
Centre for Market Insights
Legal Tech Lab
Smart Asset Management Lab
Smart Health and Vitality Lab
Smart Education Lab
Centre for Financial Innovation


CORE TEAM
appliedai@hva.nl
FRANK KRESIN
Secretary
LIZA VERHEIJKE
Community Manager
NANDA PIERSMA
Scientific Director
KIRSTEN VAN KEIMPEMA
Project Manager
GEERT WISSINK
Program Manager
ELVIRA DENTENEER-WIJNEN
Project Manager


A PUBLICATION OF
NewScientist
AI
TECHNOLOGY
FOR PEOPLE


Hogeschool van Amsterdam
CENTRE OF
EXPERTISE
APPLIED AI
Creating Tomorrow

TU Delft | AI Initiative

Research node:
TU Delft AI Initiative

Directors:
Prof. Geert-Jan Houben

Year of establishment:
2020

Number of researchers:
101+

Parent organizations:
TU Delft

Contact information:

Topics of expertise

cognition and AI, automated reasoning and inference, computer vision, ethical AI, heuristic search, human interfaces, intelligent robotics, knowledge representation, machine learning, multi-agent systems, natural language processing, planning and action, reasoning under uncertainty, generative AI

Selected publications, peer-reviewed

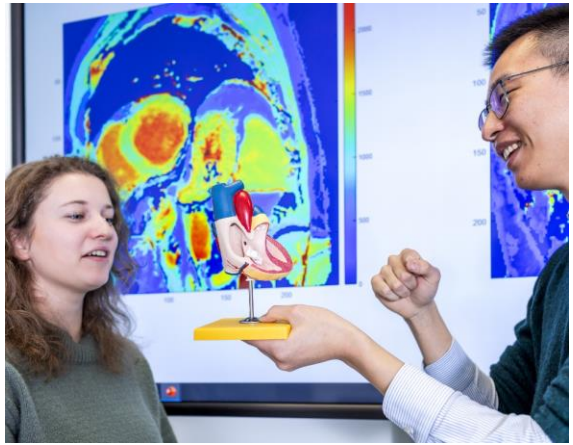
- M. Suau, t al., "Distributed influence-augmented local simulators for parallel MARL in large networked systems", Advances in Neural Information Processing Systems, 2024
- P. Altmeyer, et al., "Faithful model explanations through energy-constrained conformal counterfactuals", Thirty-Eighth AAAI Conference on Artificial Intelligence, 2024
- B. Yildiz, et al., "AmsterTime: A visual place recognition benchmark dataset for severe domain shift", 26th International Conference on Pattern Recognition, 2022
- F. De Nijs, et al., "Constrained multiagent Markov decision processes: a taxonomy of problems and algorithms", Journal of Artificial Intelligence Research, 2021
- O. Kudina, "Alexa, who am I?": voice assistants and hermeneutic lemniscate as the technologically mediated sense-making" Human Studies, 2021

Selected projects, funded by the European Commission or national agencies

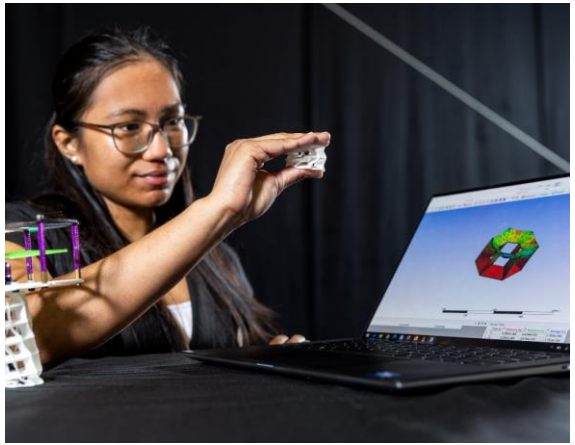
- ELSA Lab Defence, NWO (grant no. NWA.1332.20.008), 2022 – 2026
- REAiHL, "Responsible and Ethical AI in Healthcare Lab", ICAI (grant no. 60UWV 6060191419), 2022 – 2026
- GENIUS Lab, "Generative Enhanced Next-Generation Intelligent Understanding Systems Lab", ICAI (grant no. KICH3.LTP.20.006), 2022 – 2027
- SynergAI, "Uncovering the Neuro-AI synergies through neuromorphic hardware inspired by the neocortex" NWO (grant no. NGF.1607.22.010), 2023 – 2028
- AI-COMPASS, "Adaptive Intelligence in Crowd Crisis Management through AI-Human Coordination and Ethical Practice", NWO (grant no. KICH1.VE04.22.007), 2024 – 2029

Related study programmes, doctoral or master levels

- MSc Data Science and Artificial Intelligence Technology (DSAIT), TU Delft
- MSc Computer Science, TU Delft





AI MEDIA LAB

Research node:
AI & Media Lab

Directors:
Dr. Julian Frommel, Lotte Volz, Dr. Karin van Es, Frank Visser, Prof. Dr. R. Veltkamp, Dr. H. de Clercq

Year of establishment:
2020

Number of researchers:
11-20

Parent organizations:
Utrecht University

University of Applied Sciences Utrecht

Contact information:

Topics of expertise

cognition and AI, automated reasoning and inference, computer vision, ethical AI, human interfaces, machine learning, multi-agent systems, natural language processing, generative AI

Selected publications, peer-reviewed

- J. D. Fijnheer, et al., "Competition in a household energy conservation game", Sustainability, 2021
- J. W. H. Tangelder, R. C. Veltkamp, "A survey of content based 3D shape retrieval methods", Multimedia tools and applications, 2007
- F. Pessanha, et al., "Facial image-based automatic assessment of equine pain", IEEE Transactions on Affective Computing, 2022
- S. Leijnen, F. V. Veen, "The neural network zoo", MDPI Proceedings, 2020
- J. Frommel, et al., "Recognizing affiliation: Using behavioural traces to predict the quality of social interactions in online games", CHI, 2020
- K. Van Es, et al., "Tool criticism: From digital methods to digital methodology", International Conference on Web Studies, 2018

Selected projects, funded by the European Commission or national agencies

- "Game design, AI, system modeling: Long-term consumer and community empowerment in energy", NWO (NWO KIC call Energy transition as a socio-technical challenge)
- JUMP "Responsible Applied AI", NWO (grant no. SPR.ALG.01.024), 2022-2026
- DRAMA "Designing responsible AI for media applications", NWO (RAAK), 2021-2023

Related study programmes, doctoral or master levels

- Ph.D. in ICS, M.Sc. Applied Data Science, AI, Game and Media T., and Human Computer Interaction, Utrecht University
- M.Sc. Human-Centered Artificial Intelligence and M.A. Data-Driven Design, University of Applied Sciences Utrecht

aimlab

Research node:
AIM lab-Artificial intelligence for medical imaging

Directors:
Prof. Cees Snoek
Prof. Marcel Worring

Year of establishment:
2019

Number of researchers:
1-10

Parent organizations:
University van Amsterdam

Inception Institute of Artificial Intelligence

Contact information:

Topics of expertise

Computer vision, knowledge representation, machine learning, natural language processing

Selected publications, peer-reviewed

- Z. Xiao, et al., "A bit more Bayesian: Domain-invariant learning with uncertainty", International conference on machine learning (ICML), 2021
- M. Derakhshani, et al., "Kernel continual learning", International conference on machine learning (ICML), 2021
- Y. Du, et al., "Hierarchical variational memory for few-shot learning across domains", International conference on learning representations (ICLR), 2022
- J. Shen, et al., "Variational multi-task learning with Gumbel-softmax Priors", Neural information process systems (NeurIPS), 2021
- T. van Sonsbeek, et al., "Variational knowledge distillation for disease classification in chest x-rays", Information processing in medical imaging (IPMI), 2021
- I. Najdenkoska, et al., "Variational topic inference for chest x-ray report generation", International conference on medical image computing and computer assistant interventions (MICCAI), 2021

Selected projects, funded by the European Commission or national agencies

- AIM lab, Inception Institute of Artificial Intelligence and University of Amsterdam (Public-Private Partnership), 2019-2024

Related study programmes, doctoral or master levels

- Master AI, University van Amsterdam

Research node:
National Police Lab AI Utrecht

Directors:
Prof. dr. Floris Bex

Year of establishment:
2019

Number of researchers:
11-20

Parent organizations:
Utrecht University

Innovation Centre for Artificial Intelligence (ICAI)

Contact information:

Topics of expertise

Automated reasoning and inference, case-based reasoning, commonsense reasoning, ethical AI, knowledge representation, machine learning, multi-agent systems, natural language processing, reasoning under uncertainty

Selected publications, peer-reviewed

- M. Robeer, et al., "Generating realistic natural language counterfactuals. Findings of the Association for Computational Linguistics", EMNLP, 2021
- R. Wieten, et al., "Information graphs and their use for Bayesian network graph construction", International Journal of Approximate Reasoning, vol. 136, pp. 249-280, 2021
- A. Borg, F. Bex, "Explaining arguments at the Dutch national police. AI approaches to the complexity of legal systems XI-XII", Lecture Notes in AI, pp. 183-197, 2021
- D. Odekerken, et al., "Estimating stability for efficient argument-based inquiry", International Conference on Computational Models of Argument (COMMA), 2020
- M. van den Hurk, F. Dignum, "Towards fundamental models of radicalization", Social Simulation Conference (SSC), 2019
- D. Craandijk, F. Bex, "Deep learning for abstract argumentation semantics", International Joint Conference on Artificial Intelligence (IJCAI), pp. 1667-1673, 2020

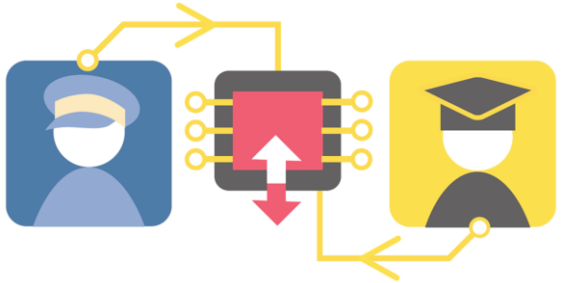
Selected projects, funded by the European Commission or national agencies

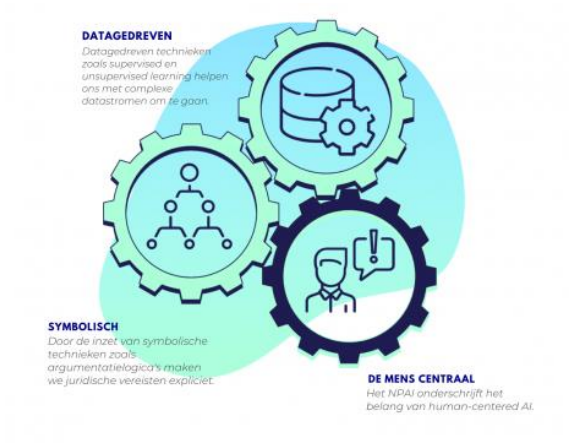
- AI4Intelligence, NWO, 2022-2027
- ALGOPOL, NWO, 2020-2024
- "Intelligence Amplification for Cybercrime", Netherlands National Police, 2016-2020

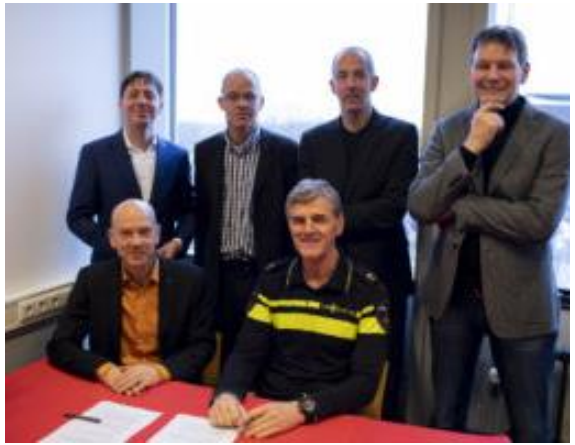
Related study programmes, doctoral or master levels

- Artificial Intelligence, Utrecht University


POLITIE




DATAGEDREVEN
Datagedreven technieken zoals supervised en unsupervised learning helpen ons met complexe datastromen om te gaan.
SYMBOLISCH
Door de inzet van symbolische technieken zoals argumentatielogica's maken we juridische vereisten expliciet.
DE MENS CENTRAAL
Het NPAI onderschrijft het belang van human-centered AI.



Research node:
Civic AI Lab Institute of Informatics (IvI)

Directors:
Sennay Ghebreab
Jacco v. Ossenbruggen
Hinda Haned

Year of establishment:
2020

Number of researchers:
11-20

Parent organizations:
University of Amsterdam, Vrije Universiteit, City of Amsterdam

Ministry of the Interior and Kingdom Relations

Contact information:

Topics of expertise
Computer vision, ethical AI, machine learning

Selected publications, peer-reviewed

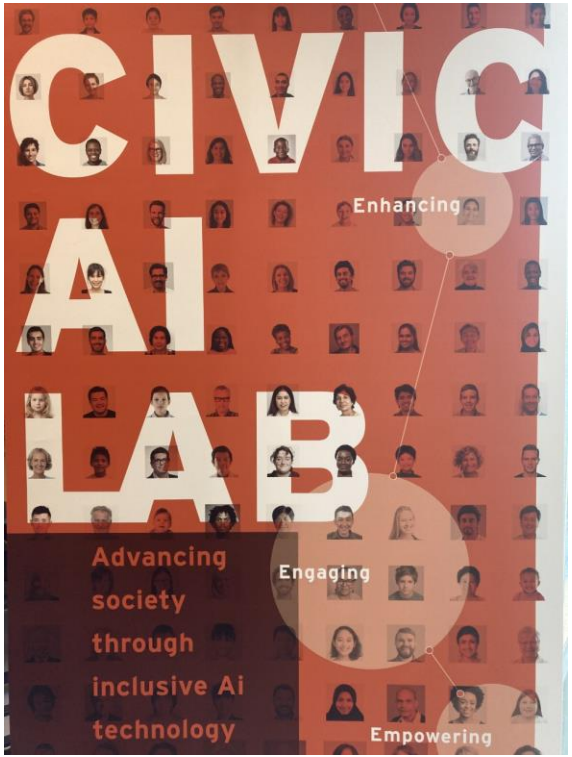
- F. P. Santos, et al., "Link recommendation algorithms and dynamics of polarization in online social networks." National Academy of Sciences, 2021
- F. P. Santos, et al., "The complexity of human cooperation under indirect reciprocity", Philosophical Transactions of the Royal Society B, 2021
- A. S. Teixeira, et al., "Eliciting Fairness in N-Player Network Games through Degree-Based Role ...", 2021
- R. Merhej, et al., "Cooperation between independent reinforcement learners under wealth inequality and collective risks", International Conference on Autonomous Agents and Multiagent Systems (AAMAS), 2021
- A. Lucic, et al., "FOCUS: Flexible optimizable counterfactual explanations for tree ensembles", Conference on Artificial Intelligence (AAAI), 2022

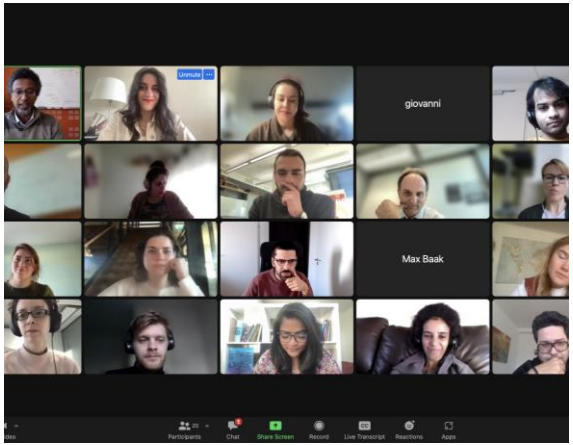
Selected projects, funded by the European Commission or national agencies

- CommuniCity, "Innovative Solutions Responding to the Needs of Cities & Communities", European Commission
- PhD projects within Civic AI Lab and Socially Intelligent Artificial Systems (SIAS) group, University of Amsterdam

Related study programmes, doctoral or master levels

- M.Sc. in Artificial Intelligence, M.Sc. in Computational Science, University of Amsterdam
- Other programs, University of Amsterdam


CIVIC
AI
LAB
Enhancing
Advancing
society
through
inclusive Ai
technology
Engaging
Empowering


giovanni
Max Baak

Research node:
AI Fluids Lab

Directors:
Dr. Anh Khoa Doan
Dr. Davide Modesti

Year of establishment:
2021

Number of researchers:
11-20

Parent organizations:
Delft University of Technology

Contact information:

Topics of expertise

Automated reasoning and inference, knowledge representation, machine learning, multi-agent systems

Selected publications, peer-reviewed

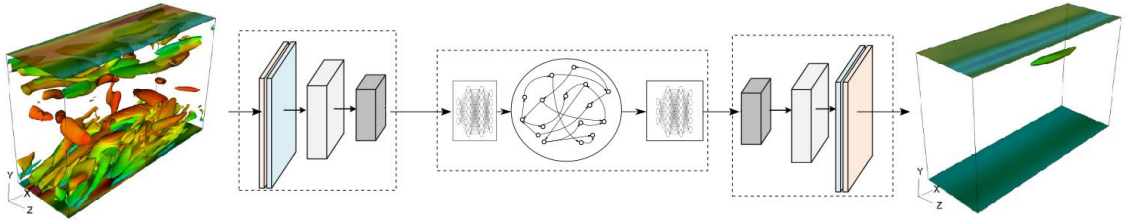
- N.A.K. Doan, et al., "Auto-encoded reservoir computing for turbulence learning", Lect. Notes Comput. Sci.-ICCS2021, vol. 12746, pp. 344–351, 2021
- L. Magri, N.A.K. Doan, "Physics-informed data-driven prediction of turbulent reacting flows with Lyapunov analysis and sequential data assimilation," Data Analysis for Direct Numerical Simulation of Turbulent Combustion, Springer, 2020
- D. Modesti. "A priori tests of eddy viscosity models in square duct flow", Theor. Comput. Fluid Dyn. Vol. 34, pp. 713-734, 2020
- M. P. Sitte, N.A.K. Doan, "Velocity reconstruction in puffing pool fires with physics-informed neural networks", Physics of Fluids, vol. 34, 087124, 2022
- K. Jigjid, et al., "SGS reaction rate modelling for MILD combustion based on machine-learning combustion mode classification: Development and a priori study", Proceedings of the Combustion Institute, 2022
- M. Lesjak, N.A.K. Doan, "Chaotic systems learning with hybrid echo state network/proper orthogonal decomposition based model", Data-centric Engineering, vol. 2, e16 (2022)

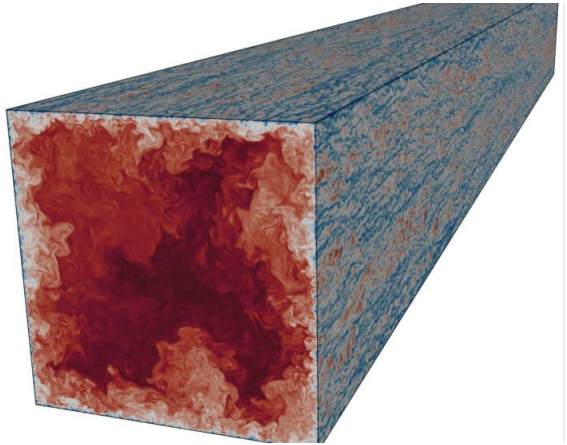
Selected projects, funded by the European Commission or national agencies

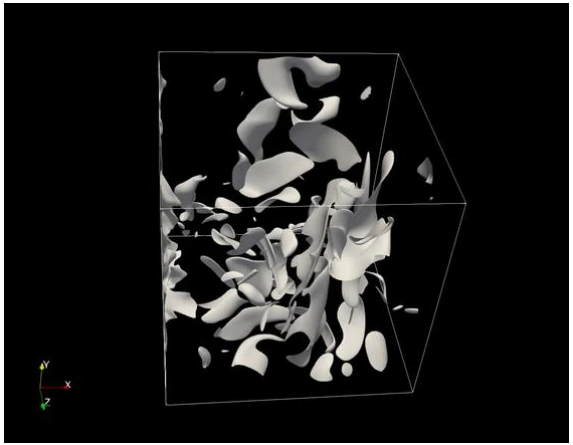
- PINNTFlows "Physics-Informed Neural Networks for Turbulent Flows", PRACE-DECI (grant no. 15DECI0402), 2021
- "INSULATE: dIrect Numerical SimULAtion of Turbulent boundary layers over acoustic linErs", PRACE, 2021
- "INTAkE–understandINg Turbulence over porous surfaces: towards efficient Acoustic linErs for aircraft engines", PRACE, 2020

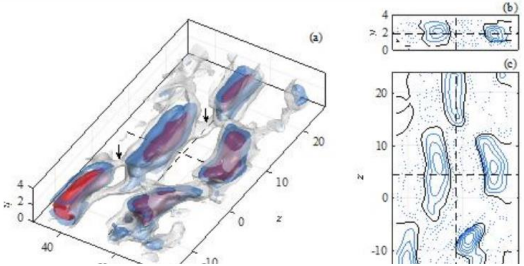
Related study programmes, doctoral or master levels

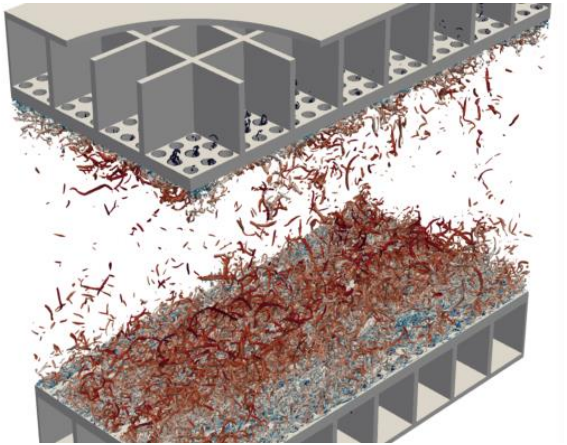
- Delft AI Initiative doctoral programme, Delft University of Technology
- Engineering with AI-BSc Minor, Delft University of Technology








(a)
(b)
(c)



Research node:
Center of Excellence in AI for structures

Directors:
Dr.ir. Dimitrios Zarouchas

Year of establishment:
2021

Number of researchers:
11-20

Parent organizations:
Delft University of Technology

Contact information:

Topics of expertise

Selected publications, peer-reviewed

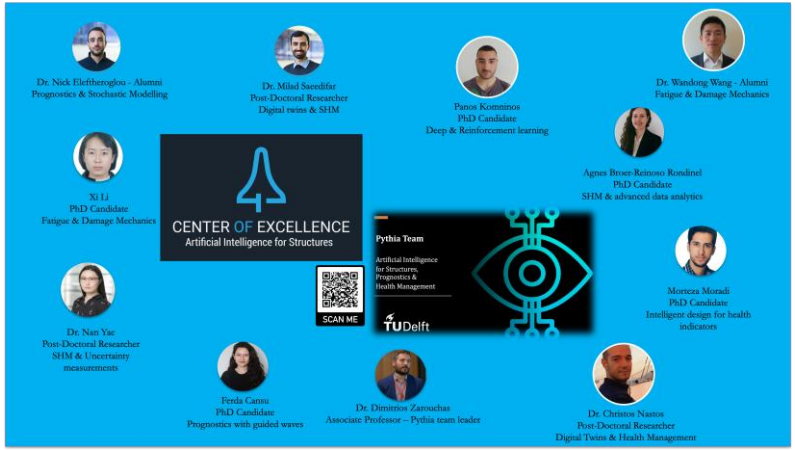
- C. Nastos, D.Zarouchas, "Probabilistic failure analysis of quasi-isotropic CFRP structures utilizing the stochastic finite element method and the Karhunen-Loeve expansion methods", Composites Part B: Engineering, vol. 109742, 2022
- T. Loutas, et al., "A data-driven probabilistic framework towards the in-situ prognostics of fatigue life of composites based on acoustic emission data", Composite Structures, vol. 161, pp. 522-529, 2017
- N. Eleftheroglou, et al., "Structural health monitoring data fusion for in-situ life prognosis of composite structures", Reliability Engineering & System Safety, vol. 178, pp. 40-54, 2018

Selected projects, funded by the European Commission or national agencies

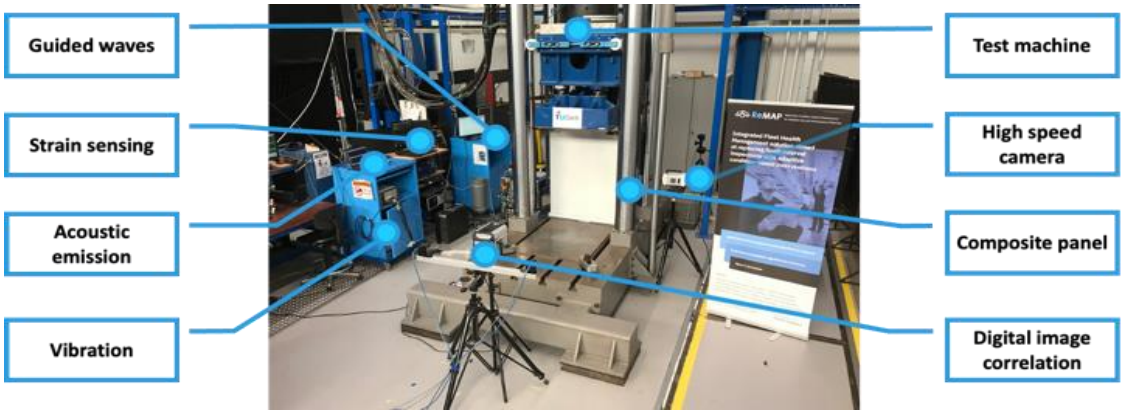
- ReMAP, European Commission (H2020, grant no. 769288)
- MORPHO "Embedded Life-cycle management for smart multimaterials structures: application to engine components", European Commission (H2020, grant no. 101006854)
- ENHANCE "European training network in intelligent prognostics and health management in composite structures", European Commission (H2020, grant no. 859957)

Related study programmes, doctoral or master levels

- Doctoral Education Program TU Delft, TU Delft


Dr. Nick Eleftheroglou - Alumni
Prognostics & Stochastic Modelling
Dr. Milad Saeedifar
Post-Doctoral Researcher
Digital twins & SHM
Panos Kotsinos
PhD Candidate
Deep & Reinforcement learning
Dr. Wandong Wang - Alumni
Fatigue & Damage Mechanics
Agnes Broer-Reinoso Rondinel
PhD Candidate
SHM & advanced data analytics
Xi Li
PhD Candidate
Fatigue & Damage Mechanics
CENTER OF EXCELLENCE
Artificial Intelligence for Structures
SCAN ME
Pythia Team
Artificial Intelligence for Structures, Prognostics & Health Management
TUDelft
Morteza Moradi
PhD Candidate
Intelligent design for health indicators
Dr. Nan Yao
Post-Doctoral Researcher
SHM & Uncertainty measurements
Ferda Cansu
PhD Candidate
Prognostics with guided waves
Dr. Dimitrios Zarouchas
Associate Professor – Pythia team leader
Dr. Christos Nastos
Post-Doctoral Researcher
Digital Twins & Health Management


TUDelft


Guided waves
Strain sensing
Acoustic emission
Vibration
Test machine
High speed camera
Composite panel
Digital image correlation

Research node:
Sequential Decision Making at dept. Intelligent Systems

Directors:
Dr. Frans Oliehoek
Dr. Matthijs Spaan

Year of establishment:
2023

Number of researchers:
21-50

Parent organizations:
Delft University of Technology

Contact information:

Topics of expertise

machine learning, multi-agent systems, planning and action, reasoning under uncertainty

Selected publications, peer-reviewed

- F. A. Oliehoek, et al., "A sufficient statistic for influence in structured multiagent environments." Journal of Artificial Intelligence Research, 70, 789-870, 2021.
- M. Suau, et al., "Distributed Influence-Augmented Local Simulators for Parallel MARL in Large Networked Systems". Advances in Neural Information Processing Systems, 35, pp. 28305-28318, 2022.
- W. Böhmer, et al., "Deep Coordination Graphs". *Proceedings of the 37th International Conference on Machine Learning*, PMLR 119:980-991, 2020.
- Q. Yang, et al., "Safety-constrained reinforcement learning with a distributional safety critic", Machine Learning 112 (3), 859-887
- J. Olkhovskaya, et al., "First- and Second-Order Bounds for Adversarial Linear Contextual Bandits", Advances in Neural Information Processing Systems, 37, 2023.
- C. Schilling, et al., "Safety Verification of Decision-Tree Policies in Continuous Time", Advances in Neural Information Processing Systems, 37, 2023.

Selected projects, funded by the European Commission or national agencies

- INFLUENCE "Influence-based Decision-making in Uncertain Environments", ERC, grant no. 758824, 2018-2023.
- "Reliable Out-of-Distribution Generalization in Deep Reinforcement Learning", NWO open call M1, grant no. OCENW.M.21.234 , 2023-2027
- "Epistemic AI", EU FET-Open grant agreement No. 964505, 2021-2026
- Explainable Monitoring. NWO Veni, grant no. .222.119 2023-2026

Related study programmes, doctoral or master levels

- Master Computer Science, Delft University of Technology.
- Bachelor of Computer Science and Engineering , Delft University of Technology

Noldus
Information Technology

Industry node:
Noldus Information Technology BV

Director:
Prof. Lucas Noldus

Company:
Noldus Information Technology BV

Year of establishment:
1989

Number of employees:
50-249

Office locations in Europe
Wageningen, the Netherlands

Contact information:

Sectors of expertise:
Software and IT services

Selected services or products (AI-powered or enabling AI):

- NoldusHub is the all-in-one research solution for human behavior studies. Streamline your multimodal research from start to finish and get high-quality data and insights into human behavior.
- FaceReader is the most robust automated system to gain accurate and reliable data about facial expressions.
- EthoVision XT is the most widely applied video tracking software that tracks and analyzes the behavior, movement, and activity of any animal.

Selected projects, EC or nationally-funded:

- ELAN "Efficient Lab Animal Monitoring", European Fund For Regional Development and the province of Gelderland (grant no. OOST-00063), 2024-2027
- LoLiPoP "Long Life Power Platforms for Internet of Things" Horizon Europe (Chips JU, grant no. 101112286), 2023-2026
- Newlife "New remote non-invasive monitoring solutions for ensuring the health of mothers and babies before and after birth", Horizon Europe (Chips JU, grant no. 101095792), 2023-2025
- MORSE "Multimodal Behavior Observation in Real-time Simulation Environment", Dutch regional MIT (grant no. 22-03287250), 2023-2025

Topics of interest:
Cognition and AI, computer vision, ethical ai, human interfaces, machine learning, natural language processing, generative AI

Traverse Health

Industry node:

Centre of Competence (CoC) for data engineering and analysis

Director:

Alex Loleyt, CEO

Company:

Traverse Health Europe B.V.

Year of establishment:

2022

Number of employees:

10-19

Office locations in Europe

Amsterdam, Netherlands;
Nice, France;
Istambul, Türkiye

Contact information:

Sectors of expertise:

Healthcare, hardware and networking, software and IT services, wellness and fitness

Selected services or products (AI-powered or enabling AI):

- Advanced ETL services: utilizing AI technologies to structure, integrate and harmonize RWD (real-world data) using different sources and industry standards such as HL7, FHIR to Traverse Data Model powered by OMOP CDM (Observational Medical Outcomes Partnership Common Data Model).
- Regulatory grade Real World Data (RWD): Producing high-validity Real World Evidence (RWE), study protocol design consulting, data, Quality management system (QMS) in RWE setting, submission to institutional review board / independent ethics committee approval, involvement of KOLs, Final / clinical study report development
- Regulatory compliant data sets: Identification of the best available sources for the study, utilizing SPIFD framework Development of preliminary gaps assessment for areas with additional procedures and quality control needs, Proprietary data model to convert source data, Data source verification, Clinical data to address clinical questions, Full legal compliance (GDPR, HIPAA)

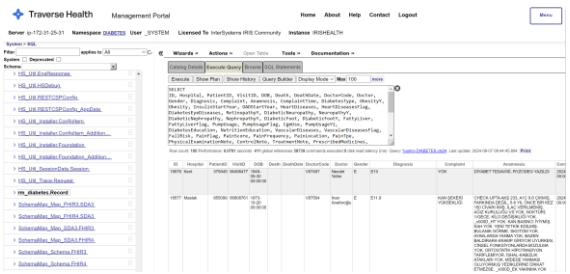
Selected projects, EC or nationally-funded:

- Retrospective Real World Data Study 'Turkiye Migraine Registry Study', TMRS-2023, 2023-2024

Topics of interest:

generative AI, heuristic search, knowledge representation, machine learning, natural language processing


ACIBADEM


Traverse Health
Management Portal


TraverseHealth dashboards
Lab results for the patient:

Unit name:
ELLIS unit Amsterdam

Director(s):
Prof. Dr. Cees Snoek

Coordinating organization(s):
University of Amsterdam

Contact information:

Introduction:
The ELLIS unit Amsterdam aims at creating AI Technology for People. We strive to create societal and economic impact through fundamental research in deep learning in order to develop the decision making, information retrieval, natural language processing, and computer vision technology to empower people in their roles as citizens, clients, patients, consumers, creators, developers, employees, and entrepreneurs. The unit maintains close links to the University of Amsterdam (UvA) which is an international hotspot for deep learning powered research in AI. The ELLIS unit will further strengthen this research hub and connect it to other AI excellence centers in Europe.

Link to introduction video https://youtu.be/aDg53cRPxvc

Unit members

Coordination:
- Adela Pranindiati

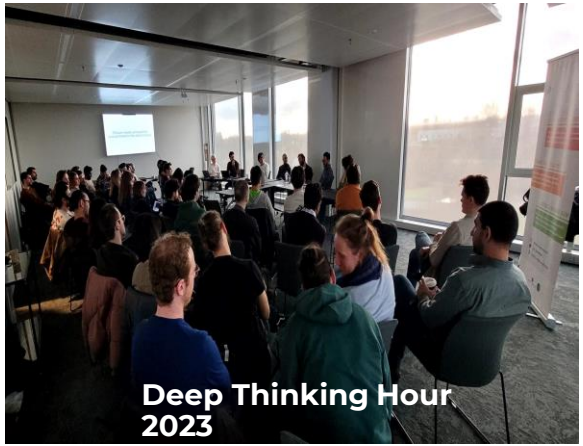
Fellows:
- Cees Snoek
- Maarten de Rijke
- Marcel Worring
- Raquel Fernández
- Max Welling

Scholars:
- Erik J. Bekkers
- Eric Nalisnick
- Ekaterina Shutova
- Herke van Hoof
- Efstratios Gavves
- Vlad Niculae

Members:
- Iacer Calixto
- Mohammad A. Nejadi
- Patrick Forré
- Iris Groen
- Evangelos Kanoulas
- Christof Monz
- Sandro Pezzelle
- Dimitrios Tzionas
- Willem Zuidema
- Yuki M. Asano
- Johann Brehmer
- Hazel Doughty
- Dieuwke Hupkes
- Sara Magliacane
- Joris M. Mooij
- Clarisa Sánchez
- Khalil Sima'an
- Jan W. van de Meent
- Nanne van Noord
- Andrew Yates
- Wilker Aziz
- Theo Gevers
- Ivana Isgum
- Pascal Mettes
- Christian A. Naesseth
- Martin R. Oswald
- Fernando P. Santos
- Tim van Erven
- Shaodi You

Affiliated organizations(s):
- Innovation Center for Artificial Intelligence (ICAI)
- UvA Data Science Center
- Amsterdam Data Science
- Amsterdam AI


NeurIPS Fest 2023


Deep Thinking Hour 2023


ELLIS Winter School on Foundation Models 2024


ELLIS, AI4media, and AIDA Symposium on Large Language and Foundation Models, 2023


NeurIPS Fest 2022


Deep Learning Extravaganza 2023

Unit name:
ELLIS unit Delft

Director(s):
Dr. Frans A. Oliehoek

Coordinating organization(s):
Delft University of Technology

Contact information:

Introduction:
The ELLIS unit Delft offers unique research and educational strengths in the following fields: (1) sequential decision making with applications in domains like robotics, vision, self-driving cars, smart energy systems, transportation, smart cities, and cybersecurity, (2) interaction, with applications such as in human-AI interaction and collaboration, crowdsourcing, and web technologies, (3) machine learning techniques for bioinformatics in the context of healthy living, disease diagnosis and prevention, and microbiological industrial processes. A unique characteristic of Delft University of Technology is the human aware context: The Delft engineer designs solutions with inherent focus on humans as part of the overall systems and human values such as autonomy, privacy and responsibility. The unit...(more at the website)

Link to introduction video

Unit members

Coordination:
- Taylor Stone

Fellows:
- Claudia Hauff
- Robert Babuska

Scholars:
- Jens Kober
- Manon Kok

Members:
- Javier Alonso-Mora
- Wendelin Böhmer
- Emir Demirović
- Hadi Jamali-Rad
- Julian Kooij
- Mustafa Mert Çelikok
- Julia Olkhovskaya
- Matthijs T.J. Spaan
- Neil Yorke-Smith
- Holger Caesar
- Dariu Gavrila
- Hayley Hung
- Luca Laurenti
- Peyman M. Esfahani
- Marcel Reinders
- Jan van Gemert
- Xucong Zhang
- Kim Batselier
- Justin Dauwels
- Nezihe Merve Gürel
- Elvin Isufi
- Anna Lukina
- Odette Scharenborg
- Sicco Verwer
- Charlotte Frenkel
- Chirag Raman
- Mathijs de Weerdt
- Megha Khosla
- Reza Sabzevari

Affiliated organizations(s):

Unit name:
ELLIS unit Nijmegen

Director(s):
Prof. Dr. Marcel van Gerven

Coordinating organization(s):
Radboud University Nijmegen

Contact information:

Introduction:
The ELLIS unit Nijmegen promotes fundamental research in machine learning and their application in life sciences, by focusing primarily on statistical approaches. The machine learning research at the ELLIS unit Nijmegen focuses on elucidating the basic mechanism of information processing in biological systems as well as improving healthcare. This research is supported by several institutes and programs as (1) the neural computation theme of the Donders Institute for Brain, Cognition and Behaviour, which focuses on elucidating the computational mechanism underlying neural information processing, (2) the ICAI AI for Health lab, which aims to implement AI techniques for improving healthcare, (3) the bits and brains program which focuses on neuromorphic computing, (4) coordination of a recently ...(more at the website)

Link to introduction video

Unit members

Coordination:
- Inge Wortel
- Alessa Hering
- Nils Jansen
- Mahyar Shahsavari
- Maris Galesloot
- Esther van Straten
- Fleur Hendriks

Fellows:
- Tom Heskes
- Hilbert J. Kappen
- Bram van Ginneken

Scholars:
- Umut Güçlü

Members:
- Luca Ambrogioni
- Max Hinne
- Pablo Lanillos
- Yağmur Güçlütürk
- Nils Jansen
- Martha Larson

Affiliated organizations(s):

NordSTAR
Nordic Center for Sustainable and Trustworthy AI Research

Research node:

Nordic Center for Sustainable and Trustworthy AI Research (NordSTAR)

Directors:

Prof. Pedro Lind

Prof. Anis Yazidi

Year of establishment:

2021

Number of researchers:

11-20

Parent organizations:

Oslo Metropolitan University

Contact information:

Topics of expertise

Automated reasoning and inference, case-based reasoning, constraint processing, ethical AI, human interfaces, machine learning, multi-agent systems, reasoning under uncertainty

Selected publications, peer-reviewed

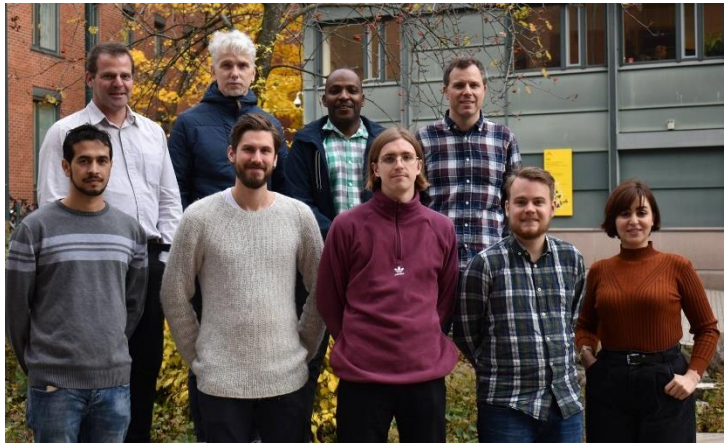
- K.Heiney, et al., "Criticality, connectivity, and neural disorder: A multifaceted approach to neural computation", Frontiers in Computational Neuroscience, 2021
- A.Yazidi, et al., "A new decision making model based on Rank Centrality for GDM with fuzzy preference relations", European Journal of Operational Research, 2022
- D. T. Schroeder, et al., "The connectivity network underlying the German's Twittersphere: a testbed for investigating information spreading phenomena", Scientific Reports, 2022
- M. A. Riegler, et al., "Artificial intelligence in the fertility clinic: status, pitfalls and possibilities", Human Reproduction, 2021
- A.M. Storås, et al., "Artificial intelligence in dry eye disease", The ocular surface, 2021
- V. Thambawita, et al., "DeepFake electrocardiograms using generative adversarial networks are the beginning of the end for privacy issues in medicine", Scientific Reports, 2021

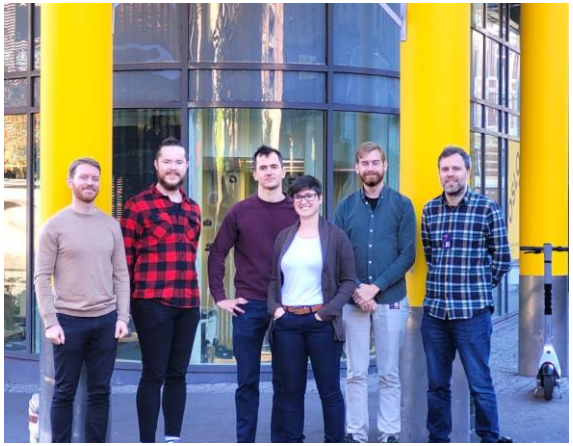
Selected projects, funded by the European Commission or national agencies

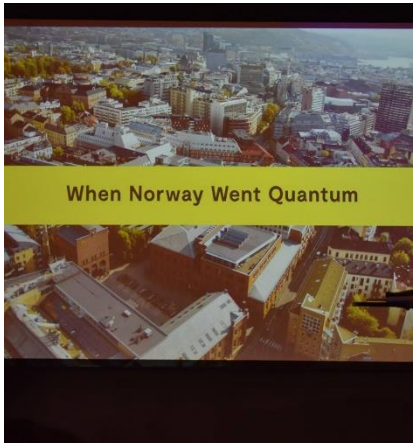
- DQUANT "Dissipative Quantum Chaos Perspective on Near-Term Quantum Computing", European Commission (Quantum Phenomena and Resources, grant no. 731473 and grant no. 101017733)
- AI-Mind "Artificial Intelligence for Dementia Prevention", European Commission (Horizon 2020, grant no.964220)
- SOCRATES "Self-Organizing Computational Substrates", Research Council Norway (IKTPLUSS RIA, grant no.270961)
- DeepCA "Hybrid Deep Learning Cellular Automata Reservoir", Research Council Norway (Young Research Talent, grant no. 286558)

Related study programmes, doctoral or master levels

- Master program: Applied Computer and Information Technology, Oslo Metropolitan University
- PhD program: Engineering Science, Oslo Metropolitan University






When Norway Went Quantum

AI WORK TEAM
University of Lodz

Research node:
AI Work Team

Directors:
Prof. Krzysztof Stefański

Year of establishment:
2021

Number of researchers:
1-10

Parent organizations:
University of Lodz

Contact information:

Topics of expertise

cognition and AI, automated reasoning and inference, case-based reasoning, commonsense reasoning, ethical AI, human interfaces, intelligent robotics

Selected publications, peer-reviewed

- I. Florczak I., et al., "A modern technológiák a lengyel jogrendszerben, különös tekintettel a mesterséges intelligenciára", Infokommunikáció és jog, 2023
- S. Wojtczak, P. Księżak, "Toward a Conceptual Network for the Private Law of Artificial Intelligence", Law, Governance and Technology Series, 2023
- K. Stefański, "The issue of the subjectivity of artificial intelligence acting for an employer", Studies on Labour Law and Social Policy, 2022
- S. Wojtczak, "Endowing Artificial Intelligence with legal subjectivity", AI & SOCIETY, 2022
- S. Wojtczak, P. Księżak, "Causation in Civil Law and the Problems of Transparency in AI European Review of Private Law", European Review of Private Law, 2021

Selected projects, funded by the European Commission or national agencies

Related study programmes, doctoral or master levels


LLRN5
POLAND 2021: WARSAW/LODZ

Research node:

R&D Center for Artificial Intelligence and Digital Economy

Directors:

Dr. Grażyna Żebrowska

Year of establishment:

2021

Number of researchers:

51-100

Parent organizations:

National Centre for Research and Development

Contact information:

Topics of expertise

cognition and AI, automated reasoning and inference, computer vision, constraint processing, intelligent robotics, knowledge representation, machine learning, multi-agent systems, natural language processing, planning and action, reasoning under uncertainty

Selected publications, peer-reviewed

- Sz. Tworkowski, et al., "Focused Transformer: Contrastive Training for Context Scaling", Conference on Neural Information Processing Systems [NeurIPS], 2023.
- M. Olko, et al., "Trust Your ∇: Gradient-based Intervention Targeting for Causal Discovery", Conference on Neural Information Processing Systems [NeurIPS], 2023.
- W. Masarczyk, et al., "The Tunnel Effect: Building Data Representations in Deep Neural Networks", Conference on Neural Information Processing Systems [NeurIPS], 2023.
- A. Pardyl, et al., "Active Visual Exploration Based on Attention-Map Entropy", International Joint Conference on Artificial Intelligence (IJCAI), 2023.
- T. Lizurej, et al., "On Manipulating Weight Predictions in Signed Weighted Networks", AAAI Conference on Artificial Intelligence, 2023.
- D. Rymarczyk, et al., "ICICLE: Interpretable Class Incremental Continual Learning", International Conference on Computer Vision [ICCV], 2023.

Selected projects, funded by the European Commission or national agencies

- Mazovia EDIH, "European Digital Innovation Hub of Mazovia", European Digital Innovation Hubs (grant no. 101083509), 2023-2025.
- EXALT, "EXplainable ALgorithmic Tools", ERC PoC (grant no. 101082299), 2023-2025.
- ELIAS, "European Lighthouse of AI for Sustainability", HORIZON Research and Innovation Action CL4 (grant no. 101120237), 2023-2027.
- "Parallel and exact algorithms for path problems in directed graphs", National Science Centre – SONATA (grant no. UMO-2022/47/D/ST6/02184), 2023-2026.

Related study programmes, doctoral or master levels

- Scheme of education at the doctoral schools with IDEAS NCBR.


IDEAS


IDEAS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UNIT WARSAW
FUNDAMENTAL SCIENCE
SOCIETAL IMPACT

BRAND24

Industry node:

AI-powered media monitoring tool, Brand24.

Director:

Krzysztof Rajda, Head of AI, Brand24

Company:

Brand24

Year of establishment:

2011

Number of employees:

50-249

Office locations in Europe

Poland-Wrocław, Warszawa, Kraków

Contact information:

Sectors of expertise:

Media and communications, software and IT services

Selected services or products (AI-powered or enabling AI):

Brand24 is designed for comprehensive brand monitoring and analytics. Advanced AI-driven features include,

1. **AI Insights**: Provides actionable suggestions and thorough reports for brand growth.
2. **Brand Assistant**: An AI personal assistant for querying brand health, mentions, and data analysis.
3. **Sentiment Analysis**: Analyzes the emotions behind mentions to understand public sentiment.
4. **Influencer Analysis**: Identifies influential authors in social media discussions.
5. **Topic Analysis**: Highlights important topics and trends.
6. **Anomaly Detection**: Investigates sudden spikes in mentions for insights.

Brand24 integrates these powerful AI features and more into a user-friendly platform.

Selected projects, EC or nationally-funded:

"ASDaM Abstract Multimodal Data Summarization", No. RPDS.01.02.01-02-0065/20, Regional Operational Programme for the Lower Silesian Voivodeship, 2014-2020

Topics of interest:

Automated reasoning and inference, heuristic search, knowledge representation, machine learning, natural language processing, generative AI

Why use AI in social listening?

AI gives you leverage over your competitors, giving you actionable insights and providing additional data.

Time-saver

AI-powered solutions of Brand24 work in the background, allowing you to focus on other tasks. Instead of manually analyzing thousands of mentions you can use Artificial Intelligence to work for you.

Actionable insights

Brand24 not only gathers raw data but, thanks to AI, can also give you actionable insights. The advanced features analyze the data to provide you with action points for further work.

Automated workflow

Brand24 is easy to set up, and once you do it, you can rely on the AI solutions to work for you. Use tools like automated AI Insights to get work done faster and more efficiently.

MIM SOLUTIONS

Industry node:
ICT & IT Services and IT Consulting

Director:
Jerzy Orłowski, Managing Director and Team Leader

Company:
MIM Solutions

Year of establishment:
2015

Number of employees:
10-49

Office locations in Europe
Warsaw, Poland

Contact information:

Sectors of expertise:
corporate services, software and IT services

Selected services or products (AI-powered or enabling AI):

AI Audit: Comprehensive evaluation of your company to identify processes that can be most efficiently improved or automated using existing AI tools or custom models. We provide a detailed assessment to optimize operations and enhance productivity.

Custom AI Models: Development of high-quality, tailored AI solutions designed to meet your specific business needs. Our team collaborates with you to create and implement custom AI models that drive innovation and efficiency.

Algorithm Prototyping: Rapid assessment and prototyping of state-of-the-art AI algorithms to determine achievable performance for your specific use cases. We offer fast-track solutions to validate AI applications before full-scale deployment.

Selected projects, EC or nationally-funded:

"Advanced Methods for Modeling Viral Processes", NCN (grant no. 2020/37/B/ST6/04179)

"Remwave", Eurostars 3 (grant no. 2023-00109)

"Acorai", Eurostars 3 (grant no. 2024-02051)

Topics of interest:
knowledge representation, machine learning, reasoning under uncertainty, generative AI


TIANA KULCZY

Unit name:
ELLIS unit Warsaw

Director(s):
Prof. Tomasz Trzciński

Coordinating organization(s):
IDEAS NCBR

Contact information:

Introduction:
The ELLIS Unit Warsaw operates at IDEAS NCBR, a research center created with a goal to become the largest innovation center in the field of artificial intelligence and digital economy in Poland. It is a platform connecting the business and academic environment, as well as a place to educate the best specialists in the field of AI in the spirit of scientific excellence. Developed solutions will find practical application in the future in the best forms of positive impact on the economic system and society.

Link to introduction video ELLIS unit Warsaw Intro

Unit members

Coordination:
- Artur Kołodziejczyk-Skowron

Scholars:

Fellows:

Members:
- Kamil Adamczewski
- Łukasz Kuciński
- Tomasz Michalak
- Piotr Miłoś
- Piotr Sankowski
- Ewa Szczurek
- Tomasz Trzciński
- Bartłomiej Twardowski
- Krzysztof Walas
- Bartosz Zieliński

Affiliated organizations(s):


IDEAS


IDEAS


IDEAS
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UNIT WARSAW
FUNDAMENTAL SCIENCE
SOCIETAL IMPACT

APPLIED ARTIFICIAL INTELLIGENCE LABORATORY

Research node:
Applied Artificial Intelligence laboratory

Directors:
Prof. João L. Vilaça

Year of establishment:
2018

Number of researchers:
11-20

Parent organizations:
Polytechnic Institute of Cávado and Ave (IPCA)

Contact information:

Topics of expertise

cognition and AI, computer vision, human interfaces, intelligent robotics, machine learning, natural language processing, generative AI

Selected publications, peer-reviewed

- B. Oliveira et al., "Design optimization of medical robotic systems based on task performance metrics: A feasibility study for robotic guided vascular laser treatments," J. F. Robot., 2024
- E. Pimentel et al., "Printable piezoresistive polymer composites for self-sensing medical catheter device applications," Compos. Sci. Technol., 2023
- B. Oliveira et al., "A multi-task convolutional neural network for classification and segmentation of chronic venous disorders," Sci. Rep., 2023
- H. R. Torres et al., "Realistic 3D infant head surfaces augmentation to improve AI-based diagnosis of cranial deformities," J. Biomed. Inform., 2022
- P. Morais et al., "Feasibility and accuracy of automated three-dimensional echocardiographic analysis of left atrial appendage for transcatheter closure," J. Am. Soc. Echocardiogr., 2022.
- H. R. Torres et al., "Anthropometric landmark detection in 3D head surfaces using a deep learning approach," IEEE J. Biomed. Heal. Informatics, 2020

Selected projects, funded by the European Commission or national agencies

- SmartHealth "Artificial Intelligence for Lifelong Personalized Patient Care", CCDRN (grant no. NORTE-01-0145-FEDER-000045), 2020-2023
- InjectID4.0 "Automatic insertion of RFID systems in the plastic injection process", NORTE (grant no. POCI-01-0247-FEDER-047195), 2020-2023
- OncoNavigator "Intelligent system for personalized navigation and mapping of oncological interventions", CCDRN (grant no. NORTE-01-0145-FEDER-000059), 2020-2023
- HfPT "Health From Portugal", (grant no. 01/C05-i01/2021), 2022-2025

Related study programmes, doctoral or master levels

- Doctoral Programme in Games and Creative Technologies
- MSc in Applied Artificial Intelligence


IPCA
INSTITUTO POLITÉCNICO DO CÁVADO E DO AVE


ITALIA
Innovative health technologies
2Ai
IPCA


2Ai
APPLIED ARTIFICIAL INTELIGENCE LABORATORY


EDUCAR
KUKA


2Ai
APPLIED
ARTIFICIAL
INTELIGENCE
LABORATORY

Unit name:

ELLIS unit Lisbon

Director(s):

Prof. Mário A. T. Figueiredo

Coordinating organization(s):

Instituto Superior Técnico-University of Lisbon; Instituto de Telecomunicações; INESC-ID; ISR-Lisboa

IST-University of Lisbon; Telecommunications Institute; INESC-ID; ISR-Lisbon

Contact information:

Introduction:

The mission of the ELLIS unit Lisbon is (1) boosting collaborative research and higher education in artificial intelligence (AI) and machine learning (ML) in Portugal and Europe, and (2) empowering AI researchers to become active agents in maximizing the social and economic impacts of ML&AI in Europe and the world. The ELLIS unit Lisbon will conduct cutting-edge research in the following AI-related areas: Natural Language Processing, Machine Learning and Optimization, Reinforcement Learning & Robotics, Computer Vision & Cognitive Robotics, Networks and Infrastructure, and Computational Biology. The ELLIS unit Lisbon will bring together researchers in these fields with the common goal of designing human-interacting explainable AI systems: this involves a strong bet on human language technologies, ...(more at the website)

Link to introduction video https://youtu.be/Mkc2OgZw4l4

Unit members

Coordination:

- Ana Saraiva Ayash

Fellows:

- Mario Figueiredo
- Manuel Lopes
- André Martins
- Ana Paiva
- Rodrigo Rodrigues

Scholars:

- Isabel Trancoso
- Chryssa Zerva

Members:

- Alberto Abad
- Catarina Barata
- Alexandre Bernardino
- Emanuel Gonçalves
- Pedro Lima
- Plinio Lopez
- Inês Lynce
- Francisco Melo
- Arlindo Oliveira
- Sergio Pequito
- Jose Santos Victor
- Susana Vinga

Affiliated organizations(s):


INSTITUTO SUPERIOR TECNICO
@tecnico


Feudal Hierarchies and Reinforcement Learning

Romanian Institute of Science and Technology

Research node:

AI & Machine Learning @ Romanian Institute of Science and Technology

Directors:

Dr. Răzvan V. Florian

Year of establishment:

2009

Number of researchers:

1-10

Parent organizations:

Romanian Institute of Science and Technology

Contact information:

Topics of expertise

cognition and AI, automated reasoning and inference, computer vision, human interfaces, intelligent robotics, knowledge representation, machine learning, natural language processing, planning and action, reasoning under uncertainty, generative AI

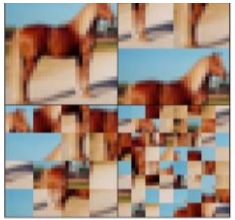
Selected publications, peer-reviewed

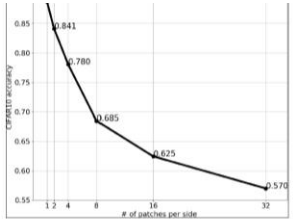
- C. Domingo, et al., "A machine learning hourly analysis on the relation the Ionosphere and Schumann resonance frequency", Measurement, 2023
- A. Davody, et al., "SuperCoder: program learning under noisy conditions from superposition of states", Neurocomputing, 2022
- C. D. Alecsa, et al., "New optimization algorithms for neural network training using operator splitting techniques", Neural Networks, 2020
- C. Stoean, et al., "Deep architectures for long-term stock price prediction with a heuristic-based strategy for trading simulations", PLOS One, 2019
- R. V. Florian, "The chronotron: A neuron that learns to fire temporally precise spike patterns", PLoS ONE, 2012
- R. V. Florian, "Reinforcement learning through modulation of spike-timing-dependent synaptic plasticity", Neural Computation, 2007

Selected projects, funded by the European Commission or national agencies

- AutoWare "Automated software development through abstraction in deep, distributed computational models", European Regional Development Fund (grant no. P_37_679), 2016-2021
- Deep Riemann "Riemannian optimization methods for deep learning", European Regional Development Fund (grant no. P_37_714), 2016-2021

Related study programmes, doctoral or master levels

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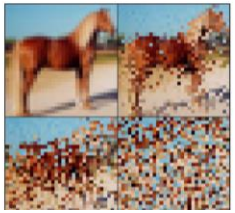

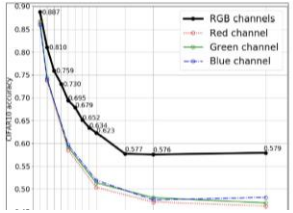
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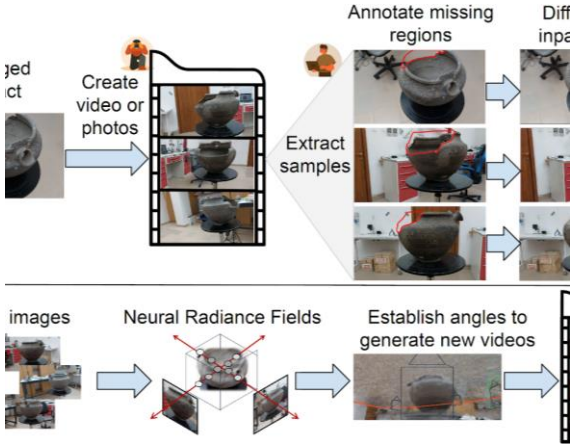
Create video or photos
Extract samples
Annotate missing regions
images
Neural Radiance Fields
Establish angles to generate new videos


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Research node:
AI Multimedia Lab

Directors:
Prof. Bogdan Ionescu

Year of establishment:
2015

Number of researchers:
11-20

Parent organizations:
Politehnica University of Bucharest

Contact information:

Topics of expertise

Automated reasoning and inference, computer vision, knowledge representation, machine learning

Selected publications, peer-reviewed

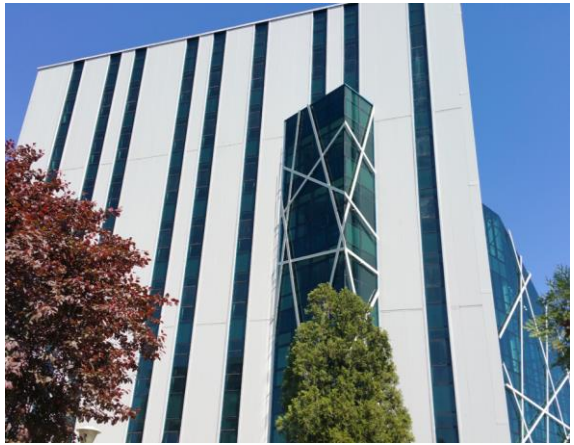
- M. Dogariu, et al., "Generation of realistic synthetic financial time-series", ACM Transactions on Multimedia Computing, Communications, and Applications, 2021
- A.-M. Tăuțan, et al., "Artificial intelligence in neurodegenerative diseases: A review of available tools with a focus on machine learning techniques", Elsevier Artificial Intelligence In Medicine, vol. 117, 2021
- M.G. Constantin, et al., "Visual interestingness prediction: A benchmark framework and literature review", International Journal of Computer Vision, vol. 129, no. 5, pp. 1526-1550, 2021
- M.G. Constantin, et al., "Affect in multimedia: Benchmarking violent scenes detection", IEEE Transactions on Affective Computing, 2020
- B. Ionescu, et al., "Benchmarking image retrieval diversification techniques for social media", IEEE Transactions on Multimedia, 23, pp. 677-691, 2020
- M.G. Constantin, et al., "Computational understanding of visual interestingness beyond semantics: Literature survey and analysis of covariates", ACM Computing Surveys, vol. 52, no. 2, 2019

Selected projects, funded by the European Commission or national agencies

- AI4Media "A European Excellence Centre for Media, Society and Democracy", European Commission (H2020, grant no. 951911), 2021-2024
- DeepVisionRomania "Identifying People in Video Streams using Silhouette Biometrics", UEFISCDI (Solutions Axis, grant no-28SOL/2021), 2021-2023
- SPIA-VA "Technologies and Innovative Video Systems for Person Re-Identification and Analysis of Dissimulated Behavior", UEFISCDI (Solutions Axis, grant no. 2SOL/2017), 2017-2020
- UMETECH "University & Media Technology for Cultural Heritage", European Commission (Erasmus+, CBHE, grant no. 574105-EPP-1-2016-1-IT-EPPKA2-CBHE-JP), 2017-2019

Related study programmes, doctoral or master levels

- Doctoral School of Electronics, Telecommunications & Information Technology, Politehnica University of Bucharest



THE INSTITUTE FOR ARTIFICIAL INTELLIGENCE RESEARCH AND DEVELOPMENT OF SERBIA

Research node:

The Institute for Artificial Intelligence Research & Development of Serbia

Directors:

Dr. Dubravko Ćulibrk

Year of establishment:

2021

Number of researchers:

21-50

Parent organizations:

Contact information:

Topics of expertise

cognition and AI, automated reasoning and inference, case-based reasoning, computer vision, human interfaces, intelligent robotics, knowledge representation, machine learning, multi-agent systems, natural language processing, planning and action

Selected publications, peer-reviewed

- D. Medvecki, et al., "Multilingual transformer and BERTopic for short text topic modelling: The case of serbian", Springer Lecture Notes in Networks and Systems, 2024
- M. Cosovic, et al., "Distributed inference over linear models using alternating gaussian belief propagation", IEEE Internet of Things Journal, 2023
- M. Stojkovic, et al., " Assessment of water resources system resilience under hazardous events using system dynamic approach and artificial neural networks", Journal of Hydroinformatics, 2023
- B. Rostami-Tabar, D. Mircetic, "Exploring the association between time series features and forecasting by temporal aggregation using machine learning", Neurocomputing, 2023
- I. Tanaskovic, N. Miljkovic, "A new algorithm for fetal heart rate detection: Fractional order calculus approach", Medical Engineering & Physics, 2023
- M. Pavlovic, et al., "Monitoring the impact of large transport infrastructure on land use and environment using deep learning and satellite imagery". Remote Sensing, 2022

Selected projects, funded by the European Commission or national agencies

- TANGO "It takes two to tango: a synergistic approach to human-machine decision making", Horizon Europe (grant no. 101120763), 2023-2026
- SEISMEC "Supporting European Industry Success Maximsiation through Empowerment Centered Development", Horizon Europe (grant no 101135884), 2024-2027
- ARITIFACT "Artificial Intelligence for Flood Resilient Infrastructure", Horizon Europe, 2024-2027
- C.O.R.E. " Carbon-Organic Remote Sensing Explorer ", EIT Digital, 2024
- Rewarding "Remote water quality monitoring and intelligence", Science Fund of the Republic of Serbia (grant no. 6707), 2023-2025

Related study programmes, doctoral or master levels

- Artificial Intelligence and Machine Learning, Master Academic Studies, Faculty of Technical Sciences, University of Novi Sad


ljutnja: 35.00%
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ljutnja: 1.00%
sreca: 97.00%
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neutralan: 1.00%
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neutralan:


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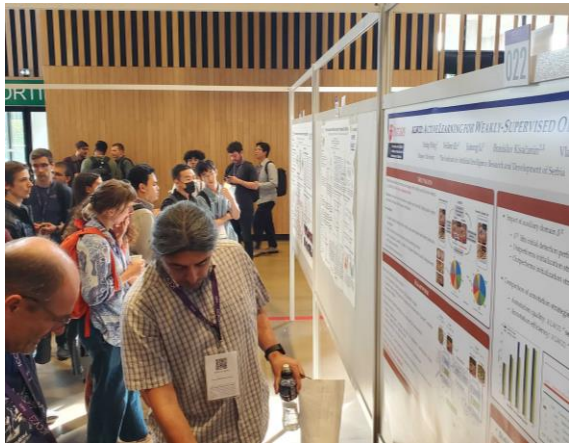
У МЕДИЦИНИ



Laboratory of Artificial Intelligence
University of Žilina

Research node:

Laboratory of Artificial Intelligence of the University of Žilina

Directors:

Prof. Luboš Buzna
Prof. Róbert Hudec
Assoc. prof. Michal Gregor

Year of establishment:

2019

Number of researchers:

21-50

Parent organizations:

University of Žilina

Contact information:

Topics of expertise

computer vision, heuristic search, knowledge representation, machine learning, multi-agent systems, natural language processing

Selected publications, peer-reviewed

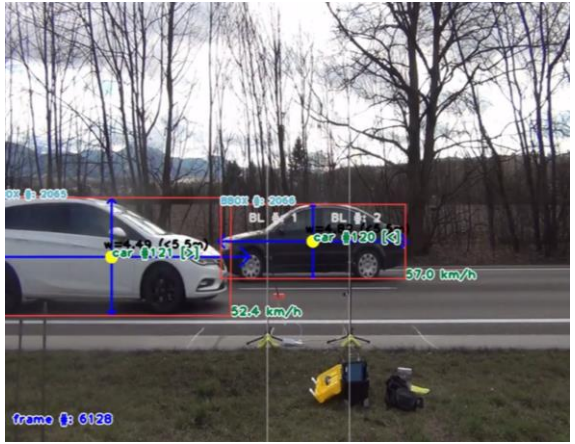
- M. Ondrašovič, P. Tarábek, "Homography ranking based on multiple groups of point correspondences", Sensors, 2021
- M. Frniak, et al., "Vehicle classification based on fbg sensor arrays using neural networks", Sensors, 2020
- M. Klimo, et al., "Deep neural networks classification via binary error-detecting output codes", Applied Sciences, 2021
- M. Straka, et al., "Analysis of energy consumption at slow charging infrastructure for electric vehicles", IEEE Access, 2021
- E. R. Nascimento, et al., "On the development of an acoustic-driven method to improve driver's comfort based on deep reinforcement learning", IEEE Transactions on Intelligent Transportation Systems, 2022

Selected projects, funded by the European Commission or national agencies

- "Innovative prediction methods for optimization of public service systems", VEGA (grant no. 1/0077/22), 2022-2024
- "Hybrid education in the area of artificial intelligence, machine learning and cybernetics at UNIZA", Ministry of Education, Science, Research and Sport of the Slovak Republic, 2020-2022
- "Integrated Teaching for Artificial Intelligence Methods at the University of Žilina", KEGA (grant no. 008ŽU-4/2021), 2021-2023
- SENSIBLE "SENSors and Intelligence in BuLt Environment", MSCA-RISE-2016: Research and Innovation Staff Exchange (grant no. 6260922), 2017-2021

Related study programmes, doctoral or master levels

- Intelligent Information Systems, Faculty of Management Science and Informatics, University of Žilina
- Process Control, Faculty of Electrical Engineering and Information Technology, University of Žilina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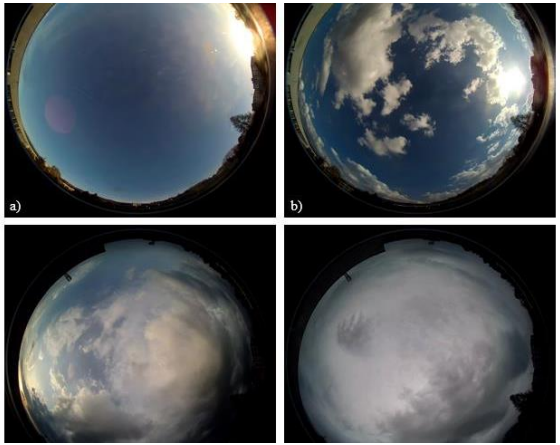
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KKUI
Katedra kybernetiky a umelej inteligencie

Research node:
Department of Cybernetics and Artificial Intelligence

Directors:
Prof. Peter Sinčák
Prof. Ján Paralič
Assoc. Prof. Marek Bundzel

Year of establishment:
1989

Number of researchers:
21-50

Parent organizations:
Technical University of Košice

Contact information:

Topics of expertise

cognition and AI, automated reasoning and inference, computer vision, intelligent robotics, knowledge representation, machine learning, natural language processing, planning and action

Selected publications, peer-reviewed

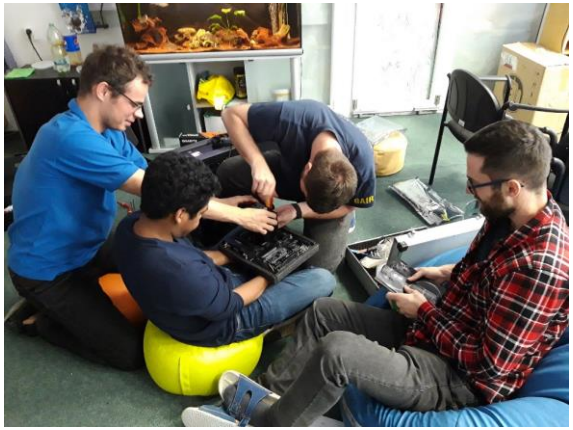
- I. Zolotova, et al., "Smart and cognitive solutions for Operator 4.0: Laboratory H-CPPS case studies", Computers & Industrial Engineering, vol. 139, 2020
- V. Maslej-Krešňáková, et al., "Comparison of deep learning models and various text pre-processing techniques for the toxic comment classification", Applied Sciences, vol. 10, no. 23, 2020
- M. Bundzel, et al., "Semantic segmentation of airborne LiDAR data in Maya archaeology", Remote Sensing, vol. 12, no. 22, pp. 3685-3707, 2020
- M. Szabóová, et al., "Emotion analysis in human-robot interaction", Electronics, vol. 9, no. 11, pp. 1761-1792, 2020
- J. Magyar, et al., "Autonomous robotic dialogue system with reinforcement learning for elderlies with dementia", 2019 IEEE SMC, pp. 3416-3421, 2019
- P. Sabol, et al., "Semantically explainable fuzzy classifier", International Journal of Pattern Recognition and Artificial Intelligence, vol. 33, no. 12, 2019

Selected projects, funded by the European Commission or national agencies

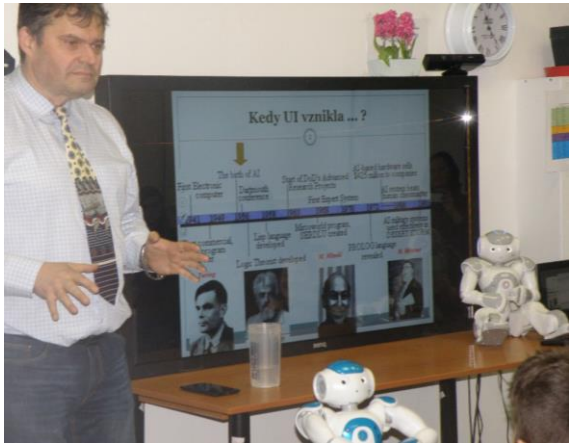
- LIFEBOTS "LIFEBOTS Exchange", European Commission (grant no. 824047), 2019-2023
- PARQ "Sudden cardiac arrest prediction and resuscitation network: Improving the quality of care", European Commission (grant no. CA19137), 2020-2024
- ENISaC "Edge-eNabled Intelligent Sensing and Computing", Slovak Research and Development Agency (grant no. APVV-20-0247), 2021-2024
- Alice "The Experiment ALICE at LHC in CERN: Study of strongly interacting matter in extreme conditions", Ministry of Education, Science, Research and Sport of the SR (grant no. 0222/2016), 2016-2020

Related study programmes, doctoral or master levels

- B.Sc., M.Sc. and Ph.D. in Business Informatics, Technical University of Košice
- B.Sc., M.Sc. and Ph.D. in Intelligent Systems, Technical University of Košice




IEEE
IEEE


Kedy UI vznikla ... ?

Research node:

Applied Intelligence Research Group

Directors:

Prof. José Manuel Molina López

Prof. Jesús García Herrero

Year of establishment:

2003

Number of researchers:

11-20

Parent organizations:

Universidad Carlos III de Madrid

Computer Science and Engineering Department

Contact information:

Topics of expertise

computer vision, intelligent robotics, knowledge representation, machine learning, multi-agent systems, reasoning under uncertainty

Selected publications, peer-reviewed

- C. Clavero, et al., "DMZoomNet: Improving of object detection using distance information in an intralogistics environment". IEEE Transactions on Industrial Informatics, 2024
- D. Sánchez, et al., "Context learning from a ship trajectory cluster for anomaly detection", Neurocomputing. 2024
- A. Bustamante, et al., "Seamless transition from machine learning on the cloud to industrial edge devices with Thinger.io", IEEE Internet of Things Journal, 2023
- J. Garcia, et al., "Real evaluation for designing sensor fusion in UAV platforms", Information Fusion, 2020
- E. Sadjadi, et al., "How effective are smooth compositions for predictive control of TS fuzzy models ", International Journal of Fuzzy Systems, 2019
- J. Carbo, et al., "Merging plans with incomplete knowledge about actions and goals through an agent-based reputation system", Expert Systems with Applications, 2019

Selected projects, funded by the European Commission or national agencies

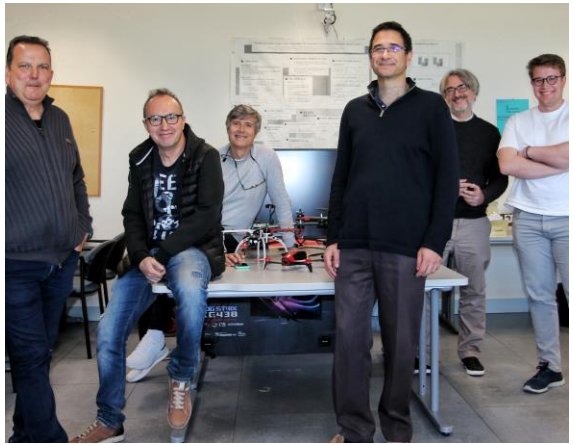
- HYDER "Merging data-driven and pHYsically-based approaches for moDElling for Rainfall-Streamflow events", Spanish Ministry of Science and Innovation, 2022-2024
- CACTUS "City Aerial vehicle Concepts: Transport, Urbanism and Safety", Spanish National Research Agency (grant no. PID2020-118249RB-C22), 2021-2024
- SIMBAT "Solutions for Intelligent Monitoring based on drone data and AI Tools" Spanish National Research Agency. (grant no. PDC2021-121567-C22), 2021-2023
- "Using Artificial intelligence to design of predictive algorithms for the identification of individuals risk overweight/obesity and their Associated Pathologies", Contribution of Genetic Analysis Madrid Government Research Agency (grant no. B2017/BMD-3773)), 2018-2022

Related study programmes, doctoral or master levels

- Ph.D and M.Sc. In Ciencia y Tecnología Informática, Universidad Carlos III de Madrid
- M.Sc. In Inteligencia Artificial Aplicada, Universidad Carlos III de Madrid








Instituto Universitario de Investigación en Ingeniería de Aragón
Universidad Zaragoza

Research node:
Artificial Intelligence Lab

Directors:
Prof. Alfonso Ortega
Prof. Josechu Guerrero
Prof. Elías Cueto

Year of establishment:
2021

Number of researchers:
51-100

Parent organizations:
University of Zaragoza

Aragon Institute of Engineering Research, Universidad de Zaragoza

Contact information:



Topics of expertise

cognition and AI, automated reasoning and inference, computer vision, human interfaces, intelligent robotics, machine learning, natural language processing

Selected publications, peer-reviewed

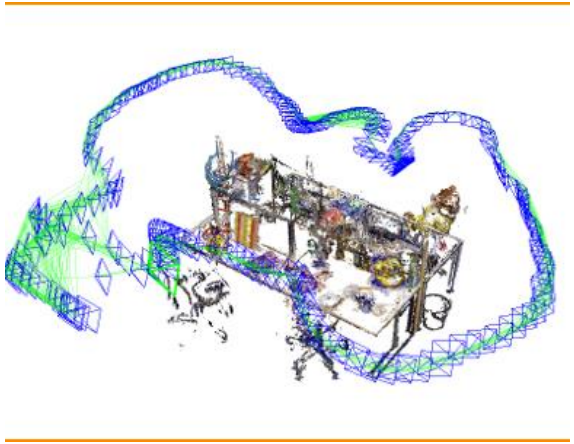
- Q. Hernández, et al., "Thermodynamics-informed graph neural networks", IEEE Transactions on Artificial Intelligence, 2024
- P. Pueyo, et al., "CineMPC: A fully autonomous drone cinematography system incorporating Zoom, Focus, Pose, and Scene Composition.", IEEE Transactions on Robotics.. 2024
- E. Bernal-Berdun, et al., "Modeling the impact of head-body rotations on audio-visual spatial perception for virtual reality applications.", IEEE Transactions on Visualization and Computer Graphics., 2024
- V. Mingote, et al., "aDCF loss function for deep metric learning in end-to-end text-dependent speaker verification systems", IEEE/ACM Transactions on Audio, Speech, and Language Processing, 2022
- C. Campos, et al., "Orb-slam3: An accurate open-source library for visual, visual–inertial, and multimap slam", IEEE Transactions on Robotics, 2021
- R. Mur-Artal, J. D. Tardós, "Orb-slam2: An open-source slam system for monocular, stereo, and rgb-d cameras.", IEEE transactions on robotics, 2017

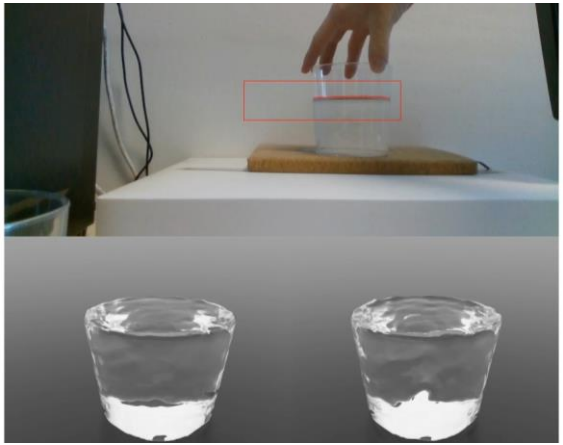
Selected projects, funded by the European Commission or national agencies

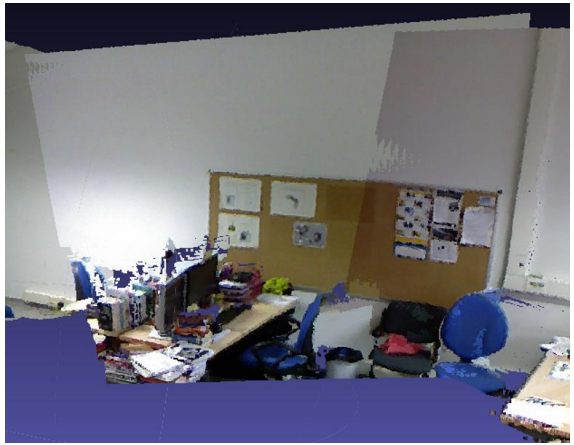
- Endomapper "Real-time mapping from endoscopic video", European Commission, H2020 (grant no. 863146). 2019-2024
- PRIME. "Predictive Rendering In Manufacture and Engineering", Horizon 2020, Marie Skłodowska-Curie. (grant no. 956585). 2020-2025.
- ESPERANTO "Exchanges for SPEech ReseArch aNd TechnOlogies", European Commission (Marie Skłodowska-Curie (grant no. 101007666), 2021-2024
- Chair of the Spanish National Strategy of AI and Sustainability. Ministry of Digital Transition and Public Service.

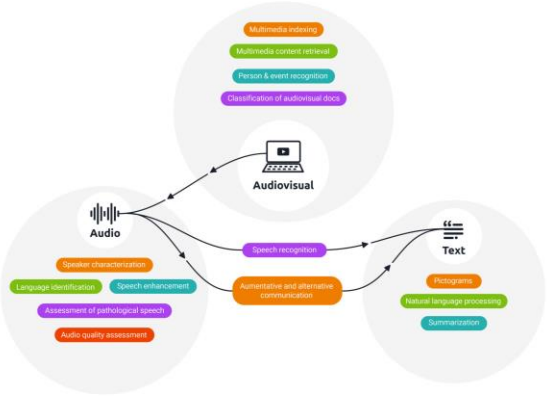
Related study programmes, doctoral or master levels

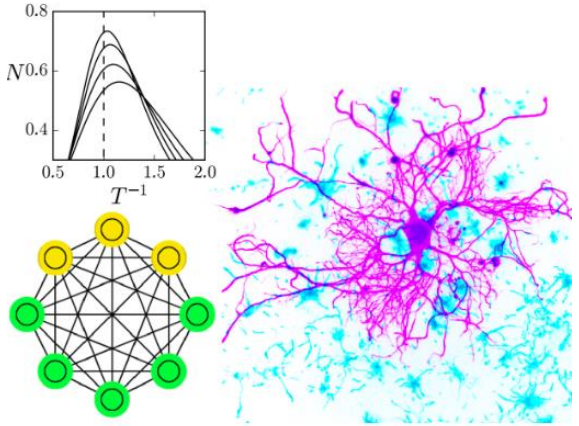
- Ph.D. Program. on Systems Engineering and Informatics, Universidad de Zaragoza
- M. Sc. on Robotics, graphics and computer vision, Universidad de Zaragoza








Multimedia indexing
Multimedia content retrieval
Person & event recognition
Classification of audiovisual docs
Audiovisual
Audio
Speaker characterization
Language identification
Speech enhancement
Assessment of pathological speech
Audio quality assessment
Speech recognition
Augmentative and alternative communication
Text
Pictograms
Natural language processing
Summarization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UNESCO Chair in AI Ethics & Governance

Research node:
UNESCO Chair in AI Ethics & Governance

Directors:
Prof. Theodore Lechterman

Year of establishment:
2024

Number of researchers:
1-10

Parent organizations:
IE University

Contact information:

Topics of expertise
cognition and AI, ethical AI

Selected publications, peer-reviewed

- T. M. Lechterman, D. Edmonds. "The perfect politician", in AI Morality, New York: Oxford University Press, 2024
- T. M. Lechterman, et al., "The concept of accountability in AI ethics and governance", The Oxford Handbook of AI Governance, 2022
- B. Lange, T. M. Lechterman, "Combating disinformation with AI: epistemic and ethical challenges", IEEE International Symposium on Technology and Society, 2021
- C. Véliz, C. Prunkl, et al., "We might be afraid of black-box algorithms", J Med Ethics, 2021

Selected projects, funded by the European Commission or national agencies

Related study programmes, doctoral or master levels

- International MBA | Master in Management | Global Online MBA | Master in International Relations , IE University


ie
UNIVERSITY


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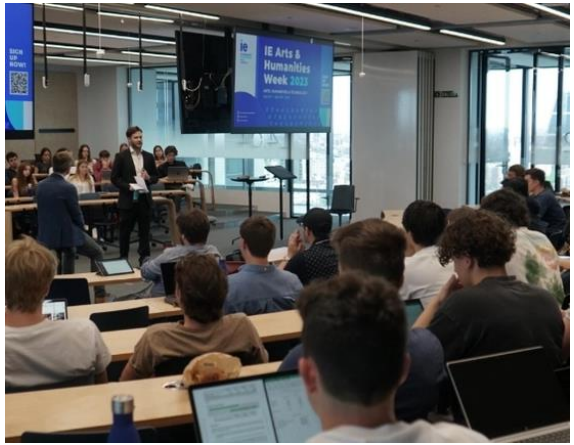
TIFICIAL INTELLIGENCE


IE Arts & Humanities Week 2023


ie

Group of Artificial Intelligence Applications

Research node:

Group of Artificial Intelligence Applications

Directors:

Prof. Pedro A. González-Calero

Prof. Belén Díaz-Agudo

Year of establishment:

2001

Number of researchers:

11-20

Parent organizations:

Complutense University of Madrid

Contact information:

Topics of expertise

case-based reasoning, human interfaces, knowledge representation, machine learning, planning and action

Selected publications, peer-reviewed

- M. Caro-Martínez, et al., "Conceptual modeling of explainable recommender systems: An ontological formalization to guide their design and development", J. Artif. Intell. Res., 2021
- J. L. Jorro-Aragoneses, et al., "RecoLibry suite: A set of intelligent tools for the development of recommender systems", Autom. Softw. Eng., 2020
- I. Sagredo-Olivenza, et al., "Trained behavior trees: Programming by demonstration to support AI game designers", IEEE Trans. Games, 2019
- J. A. Recio-García, et al., "jcolibri2: A framework for building Case-based reasoning systems", Sci. Comput. Program., 2014
- G. Flórez Puga, et al., "Supporting sketch-based retrieval from a library of reusable behaviours", Expert Syst. Appl., 2013

Selected projects, funded by the European Commission or national agencies

- PERXAI "Personalized Explainable Artificial Intelligence from Experiential Knowledge", Ministerio de Economía y Competitividad (grant no. PID2020-114596RB-C21), 2021-2023
- Isee "Intelligent Sharing of explanation experiences by Users for Users", European Commission (Horizon 2020, FET, grant no. PCI2020-120720-2), 2021-2024
- SPICE "Social cohesion, Participation and Inclusion through Cultural Engagement", European Commission (H2020, grant no. 870811), 2020-2023
- CBREx "Razonamiento basado en casos para la explicación de sistemas inteligentes", Ministerio de Economía y Competitividad (grant no.TIN2017-87330-R) 2018-2021

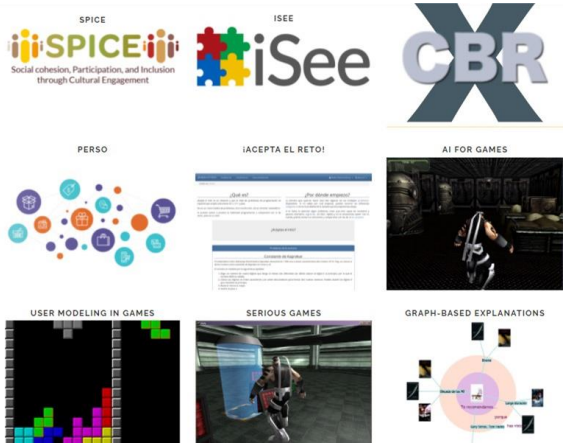
Related study programmes, doctoral or master levels

- Ph.D. in Computer science and engineering, Complutense University of Madrid
- M.Sc. In Game development, Complutense University of Madrid


iSee


PEOPLE IN GAIA
BELÉN DÍAZ AGUDO (PH.D.)
MERCEDES GÓMEZ ALBARRÁN (PH.D.)
MARCO ANTONIO GÓMEZ MARTÍN (PH.D.)
PEDRO PABLO GÓMEZ MARTÍN (PH.D.)
PEDRO ANTONIO GONZÁLEZ CALERO LEADER (PH.D.)
GUILLERMO JIMÉNEZ DÍAZ (PH.D.)
JUAN A. RECIO GARCÍA (PH.D.)
ANTONIO A. SÁNCHEZ RUIZ-GRANADOS (PH.D.)
SERGIO MAURICIO MARTÍNEZ MONTERR (PH.D.)
IOSE LUIS JORRO-ARAGONESES
MARTA CARO-MARTÍNEZ
IRENE CAMPS ORTUETA


Reunión de Zoom
GAMES
ADAONE


SPICE
SPICE
Social cohesion, Participation, and Inclusion through Cultural Engagement
ISEE
iSee
CBR
PERSO
¡ACEPTA EL RETO!
AI FOR GAMES
USER MODELING IN GAMES
SERIOUS GAMES
GRAPH-BASED EXPLANATIONS

Research node:

Virtual Worlds, Visualization and Artificial Intelligence Research Group

Directors:

Dr. Maite Lopez-Sanchez

Dr. A. Puig, Dr. M. Salamó

Dr. Inmaculada Rodríguez

Year of establishment:

2006

Number of researchers:

1-10

Parent organizations:

University of Barcelona

Contact information:

Topics of expertise

cognition and AI, case-based reasoning, ethical AI, human interfaces, machine learning, multi-agent systems, natural language processing

Selected publications, peer-reviewed

- M. Rodríguez-Soto, et al., "Instilling moral value alignment by means of multi-objective reinforcement learning", Ethics and Information Technology Journal, 2022
- D. Contreras, et al., "Integrating collaboration and leadership in conversational group recommender systems", ACM Transactions on Information Systems, 2021
- D. Tellols, et al., "Enhancing sentient embodied conversational agents with machine learning", Pattern Recognition Letters, 2020
- A. Puig, et al., "Lessons learned from supplementing archaeological museum exhibitions with virtual reality", VR, 2020
- T. Zoumpekas, et al., "An intelligent framework for end-to-end rockfall detection", International Journal of Intelligent Systems, 2021
- J. Cerquides, et al., "A conceptual probabilistic framework for annotation aggregation of citizen science data", Mathematics, 2021

Selected projects, funded by the European Commission or national agencies

- Crowd4SDG "Citizen Science for Monitoring Climate Impacts and Achieving Climate Resilience", European Commission (grant no. 872944), 2020-2023
- COREDEM "The Influence of Complex Reward Computation and Working Memory Load onto Decision-Making: A combined theoretical, human and non-human primate approach", European Commission (grant no. 785907), 2020-2023
- Nanomoocs "New audiovisual format with advanced technological functionalities for learning", FEDER program for Catalonia (grant no. COMRDI18-1-0010-02), 2019-2021
- GRAPES "learninG, pRocessing, And oPtimising shapES", European Network (grant no. 860843), 2019-2023

Related study programmes, doctoral or master levels

- Interuniversitary Master on Artificial Intelligence, UPC, UB, URV
- Mathematics and Computer Science and Engineering and Applied Sciences PhD programmes, University of Barcelona


Oriol Quintana / IQS-URL
Will AI make us more free, more autonomous?


ALFONSO VII.

IIIA-CSIC
INSTITUT D'INVESTIGACIÓ EN INTEL·LIGÈNCIA ARTIFICIAL

Research node:

Artificial Intelligence Research Institute (IIIA-CSIC)

Directors:

Prof. Carles Sierra

Prof. Felip Manyà (Deputy)

Year of establishment:

1984

Number of researchers:

21-50

Parent organizations:

Spanish National Research Council (CSIC)

Contact information:

Topics of expertise

automated reasoning and inference, case-based reasoning, commonsense reasoning, ethical AI, heuristic search, human interfaces, machine learning, multi-agent systems, natural language processing, reasoning under uncertainty

Selected publications, peer-reviewed

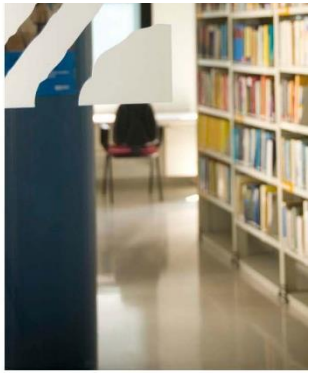
- J. Giráldez-Cru, J. Levy, "Popularity-similarity random SAT formulas", Artificial Intelligence, 2021
- F. Bistaffa, et al., "A computational approach to quantify the benefits of ridesharing for policy makers and travellers", IEEE Trans. Intell. Transp. Syst., 2021
- T. P. D. Homem, et al., "Qualitative case-based reasoning and learning", Artificial Intelligence, 2020
- A. Puig, et al., "Lessons learned from supplementing archaeological museum exhibitions with virtual reality", Virtual Reality, 2020
- E. Andrejczuk, et al., "Synergistic team composition: A computational approach to foster diversity in teams", Knowledge-Based Systems, 2019
- L. D'eer, et al., "Fuzzy neighborhood operators based on fuzzy coverings", Fuzzy Sets and Systems, 2017

Selected projects, funded by the European Commission or national agencies

- AI4EU "A European AI On Demand Platform and Ecosystem", European Commission (H2020, grant no. 825619), 2019-2021
- WeNet "The Internet of US", European Commission (H2020, grant no. 823783), 2019-2022
- TAILOR "Foundations of Trustworthy AI-Integrating Reasoning, Learning and Optimization", European Commission (H2020, grant no. 952215), 2020-2023
- CROWD4SDG "Citizen Science for Monitoring Climate Impacts and Achieving Climate Resilience", European Commission (H2020, grant no. 872944), 2020-2023

Related study programmes, doctoral or master levels

- PhD. In Computer Science, Autonomous University of Barcelona
- REDI Programme, RMIT University (Australia)




IIIA-CSIC


IIIA-CSIC
Concert de Nadal

Universitat Pompeu Fabra Barcelona

Research node:
Artificial Intelligence and Machine Learning group

Directors:
Prof. Anders Jonsson

Year of establishment:
2001

Number of researchers:
21-50

Parent organizations:
Universitat Pompeu Fabra

Contact information:

Topics of expertise

machine learning, multi-agent systems, planning and action, reasoning under uncertainty

Selected publications, peer-reviewed

- I. D. Rodriguez, et al., "Flexible FOND planning with explicit fairness assumptions", International Conference on Automated Planning and Scheduling (ICAPS), 2021 (Best paper award)
- J. Bas-Serrano, et al., "Logistic Q-Learning", International Conference on Artificial Intelligence and Statistics (AISTATS), 2021
- A. Jonsson, et al., "Planning in MDPs with gap-dependent sample complexity", Conference on Neural Information Processing Systems (NeurIPS), 2020
- B. Samanta, et al., "Nevae: A deep generative model for molecular graphs", Journal of Machine Learning Research, 2020
- B. Bonet, et al., "Learning features and abstract actions for computing generalized plans", AAAI Conference on Artificial Intelligence (AAAI), 2019
- N. Cesa-Bianchi, et al., "Boltzmann exploration done right", Advances in Neural Information Processing Systems (NIPS), 2017

Selected projects, funded by the European Commission or national agencies

- Rleap "From Data-based to Model-based AI: Representation Learning for Planning", European Commission (ERC Advanced Grant, grant no. 885107, PI Hector Geffner), 2020-2025
- SCALER "Provably Efficient Algorithms for Large-Scale Reinforcement Learning", European Commission (ERC Starting Grant, grant no. 950180, PI Gergely Neu), 2021-2026
- TAILOR "Foundations of Trustworthy AI-Integrating Reasoning, Learning and Optimization", European Commission (H2020, grant no. 952215, PI Hector Geffner), 2020-2023
- CLAP "Continual Learning and Planning", Spanish Ministry of Science and Innovation (grant no. PID2019-108141GB-I00, PI Anders Jonsson), 2020-2024

Related study programmes, doctoral or master levels

- European master's program (EMAI), Universitat Pompeu Fabra
- PhD in Information and Communication Technologies, Universitat Pompeu Fabra

Research node:

Intelligent Data Science and Artificial Intelligence Research Center

Directors:

Full Prof. Karina Gibert

Year of establishment:

2017

Number of researchers:

51-100

Parent organizations:

Universitat Politècnica de Catalunya-BarcelonaTech

Contact information:

Topics of expertise

cognition and AI, Automated reasoning and inference, case-based reasoning, computer vision, ethical AI, heuristic search, human interfaces, intelligent robotics, knowledge representation, machine learning, multi-agent systems, natural language processing, planning and action, reasoning under uncertainty

Selected publications, peer-reviewed

- S. E. Hosseininejad, et al., "Reprogrammable graphene-based metasurface mirror with adaptive focal point for THz imaging", Scientific reports, 2019
- J. Pont-Tuset, et al., "Multiscale combinatorial grouping for image segmentation and object proposal generation", *IEEE transactions on pattern analysis and machine intelligence*, 2016
- K. Gibert, et al., "Environmental data science. Environmental Modelling & Software", 2018
- A. Vellido, "The importance of interpretability and visualization in machine learning for applications in medicine and health care", Neural computing and applications, 2020
- W. G. Aguilar, C. Angulo, "Real-time video stabilization without phantom movements for micro aerial vehicles", EURASIP Journal on Image and Video Processing, 2014
- L. PADRÓ, E. STANILOVSKY, "Freeling 3.0: Towards wider multilinguality", LREC2012. 2012

Selected projects, funded by the European Commission or national agencies

- GAVIUS: From reactive to proactive public administrations (GAVIUS) EC, UIA04-095 Set 2019- Set 2023 Total Budget: 5,345,091.55€; IP: Isabel Arnet, Gavà City Council Partners: (Mataró City Council, IDEAI-UPC, Xnet, AOC, GFI, E&Y, CIMNE)
- StairwAI:Stairway to AI: Ease the Engagement of Low-Tech users to the AI-on-Demand platform through AI. EC, H2020-101017142-StairwAI 2021-01-01 2023-12-31
- WHALES: Detectability of humpback and gray whales in satellite imagery off California. The Nature Conservancy WIMMSO-DCL-CALIFORNIA. 01/08/2021- 31/01/2023.
- AI$Music FEstival. EC S+T+Arts- feb 2021-oct 2021

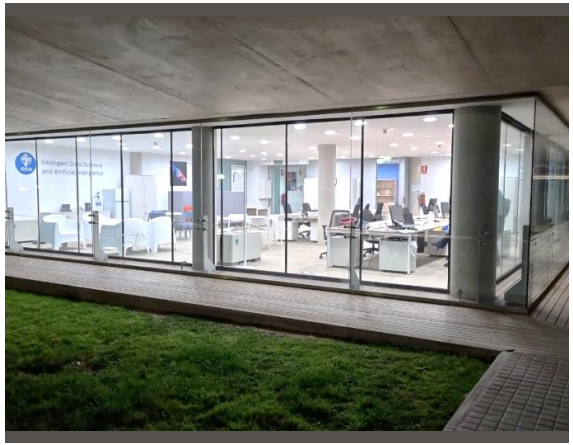
Related study programmes, doctoral or master levels

- PhD Program on Artificial Intelligence, Universitat Politècnica de Catalunya-BarcelonaTech
- Master on Artificial intelligence, Universitat Politècnica de Catalunya-BarcelonaTech


IDEAI


IDEAI
UNIVERSITAT POLITÈCNICA DE CATALUNYA BARCELONATECH


PALAU
CATALONIA.AI




music

Research node:
Computational Intelligence Group

Directors:
PROF. Pedro Larrañaga
PROF. Concha Bielza

Year of establishment:
2008

Number of researchers:
11-20

Parent organizations:
Universidad Politécnica de Madrid (UPM)

Technical University of Madrid

Contact information:

Topics of expertise

Automated reasoning and inference, heuristic search, machine learning, reasoning under uncertainty

Selected publications, peer-reviewed

- C. Puerto-Santana, et al., "Autoregressive asymmetric linear Gaussian hidden Markov models," *IEEE Transactions on Pattern Analysis & Machine Intelligence*, 2022.
- D. Atienza, et al., "Semiparametric Bayesian networks", *Information Sciences*, 2022.
- P. Larrañaga, et al., "Industrial Applications of Machine Learning ". CRC Press, 2019.
- B. Mihaljevic, et al., "Bayesian networks for interpretable machine learning and optimization", *Neurocomputing*, 2021.
- C. Bielza, P. Larrañaga, "Discrete Bayesian network classifiers: A survey," ACM Computing Surveys, 2014.
- V.P. Soloviev, et al., "Quantum approximate optimization algorithm for Bayesian network structure learning," *Quantum Information Processing,* 2023.

Selected projects, funded by the European Commission or national agencies

- BAYES-INTERPRET "Bayesian Networks for Interpretable Machine Learning and Optimization", Spanish Ministry of Science and Innovation. TED2021-1313-B-I00. 2022-2024.
- BAYESTREAMS "Bayesian Networks for Data Streams", Spanish Ministry of Science, Innovation and Universities. PID2019-109247GB-I00. 2020-2023.
- "Human Brain Project". FET Flagship of the European Commission. Participation in Preparatory Action, Rump Up Phase, SGA1, SGA2, SGA3. 2011-2023
- DSTREAMS "Research and Development of Methodology in Artificial Intelligence Oriented to Industrial Use Cases of Ultra-High Speed Continuous Data", Spanish Ministry of Science and Innovation, 2020-2023

Related study programmes, doctoral or master levels

- Ph.D. in Artificial intelligence, Universidad Politécnica de Madrid
- M.Sc. in Artificial intelligence, Universidad Politécnica de Madrid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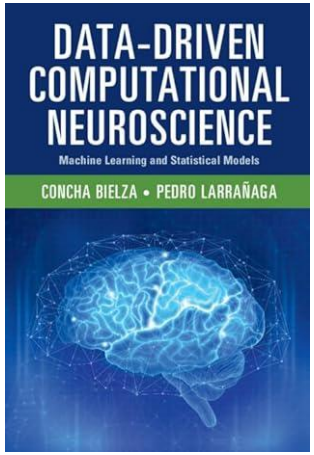
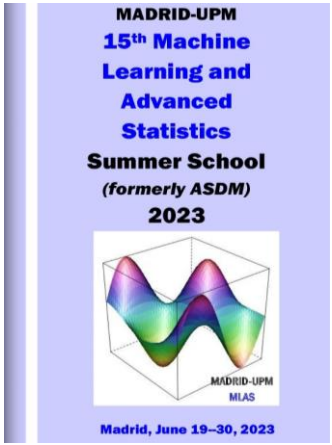
Explanation Capabilities of Bayesian Networks in Dynamic Industrial Domains
Concha Bielza, Pedro Larrañaga


DATA-DRIVEN COMPUTATIONAL NEUROSCIENCE
Machine Learning and Statistical Models
CONCHA BIELZA • PEDRO LARRAÑAGA


Asymmetric hidden Markov models and extensions applied to industry
Carlos Puerto-Santana


MADRID-UPM
15th Machine Learning and Advanced Statistics Summer School
(formerly ASDM)
2023
MADRID-UPM
MLAS
Madrid, June 19–30, 2023

Institut de Robòtica i Informàtica Industrial

Research node:

Perception and Manipulation Group at Institut de Robòtica I Informàtica Industrial

Directors:

Prof. Carme Torras

Dr. Guillem Alenyà

Year of establishment:

1995

Number of researchers:

21-50

Parent organizations:

Spanish National Research Council (CSIC)

Universitat Politècnica de Catalunya (UPC)

Contact information:

Topics of expertise

cognition and AI, computer vision, constraint processing, ethical AI, heuristic search, human interfaces, intelligent robotics, knowledge representation, machine learning, planning and action, reasoning under uncertainty

Selected publications, peer-reviewed

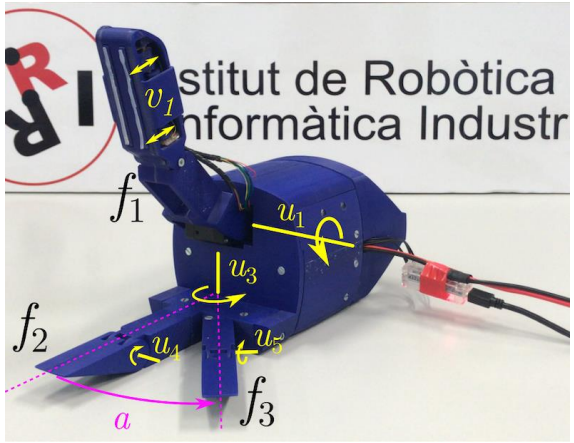
- A. Andriella, et al., "Introducing CARESSER: A framework for in situ learning robot social assistance from expert knowledge and demonstrations", User Modeling and User-Adapted Interaction, 2023
- J. Borràs, et al., "A virtual reality framework for fast dataset creation applied to cloth manipulation with automatic semantic labelling", IEEE Intl. Conference on Robotics and Automation, 2023
- E. Caldarelli, et al., "Perturbation-based stiffness inference in variable impedance control", IEEE Robotics and Automation Letters, 2022
- A. Olivares-Alarcos, et al., "OCRA-An ontology for collaborative robotics and adaptation", Computers in Industry, 2022
- X. Xu, et al., "3D human pose, shape and texture from low-resolution images and videos", IEEE Transactions on Pattern Analysis and Machine Intelligence, 2022
- J. Borràs, et al., "A grasping-centered analysis for cloth manipulation", IEEE Transactions on Robotics, 2020

Selected projects, funded by the European Commission or national agencies

- CLOTHILDE "Cloth manipulation learning from demonstration", ERC Advanced, (grant no. ERC-2016-ADG-741930), 2018-2023
- TRAIL "TRAnsparent InterpretabLe robots", MSCA DN, European Commission (grant no. 101072488), 2023-2027
- SoftEnable "Towards Soft Fixture-Based Manipulation Primitives Enabling Safe Robotic Manipulation in Hazardous Healthcare and Food Handling Applications", European Commission (grant no. 101070600), 2022-2026
- COHERENT "Collaborative hierarchical robotic explanations", European CHIST-ERA 2019 (grant no. PCI2020-120718-2), 2021-2024

Related study programmes, doctoral or master levels

- PhD in Automatic Control, Robotics and Vision, Universitat Politècnica de Catalunya
- Master's degree in Automatic Control and Robotics, Universitat Politècnica de Catalunya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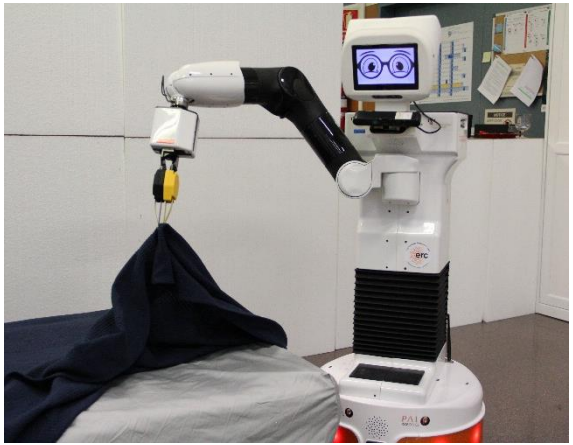
European Research Council
Manipulation



intemic

Industry node:
Industrial AI

Director:
Mr. Albert Mestre, CEO

Company:
Intelligent Chemistry, S.L

Year of establishment:
2022

Number of employees:
10-49

Office locations in Europe
Barcelona, Spain

Contact information:

Sectors of expertise:
Manufacturing, software and IT services, energy and mining, corporate services

Selected services or products (AI-powered or enabling AI):

- No-code AI platform for data flows and digital twins creation. Intemic offers a drag and drop canvas solution that allows companies to create diagrams of their processes and embed their data sources to synchronize, analyse and predict their KPIs of interest.
- Product documentation

Selected projects, EC or nationally-funded:

- "Bioprocess monitoring and optimization platform, with the SME "Klinea Biopharmaceuticals", Spanish Government, 2024
- "Bioplastics properties prediction and optimization", with the SME "Suspol Polímeros Sostenibles", Spanish Government, 2024

Topics of interest:
Machine learning, multi-agent systems, natural language processing, planning and intelligent robotics

Industry node:
AIS Group

Director:
Agustín Rodríguez, CEO

Company:
AIS

Year of establishment:
1987

Number of employees:
50-249

Office locations in Europe
Barcelona, Spain; Lisbon, Portugal

Contact information:

Sectors of expertise:
Software and IT services

Selected services or products (AI-powered or enabling AI):

- Machine Learning models for Credit Risk Management for financial institutions (from granting to collection)
- Reinforcement learning for collection management
- AI models for fraud detection
- AI models for industry 4.0 (forecasting, optimization, scheduling)
- Winbox: software tool to optimize corrugated cardboard production
- AI models for Marketing Dpt. (cross selling, upselling, churn, pricing, recommender)

Selected projects, EC or nationally-funded:

Topics of interest:
Computer vision, ethical Ai, machine learning

Industry node:

Semiconductor industry, high frequency and ultra broad bandwidth communications

Director:

Dr. Alvaro Jiménez Galindo, CEO

Company:

LeapWave Technologies S.L

Year of establishment:

2022

Number of employees:

10-19

Office locations in Europe

Madrid, Spain

Contact information:

Sectors of expertise:

Hardware and networking, manufacturing

Selected services or products (AI-powered or enabling AI):

High frequency interconnection solutions that enables high-speed (beyond Tbps) intra- and inter- chip interconnection and advanced IC thermal management:

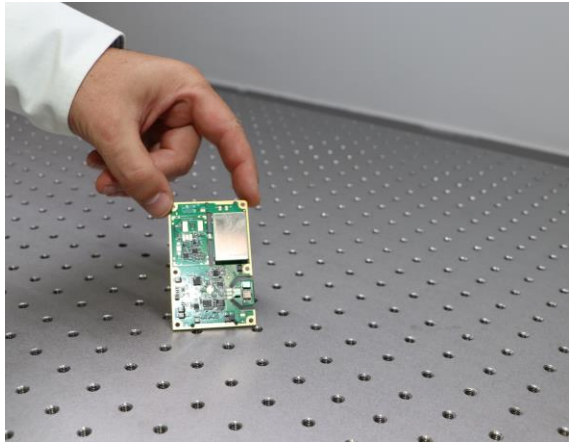
- Ultra broadband connectors (up to 500 GHz) and transitions to coax and rectangular waveguides.
- PDKs (process design kit), which is a set of files that model a fabrication process for integrating high-speed electrical ports into integrated circuits. It contains a library of basic semiconductor components that can be used to design and simulate the circuit.
- ADKs: set of integrated circuits packaging solution for high-performance semiconductors.

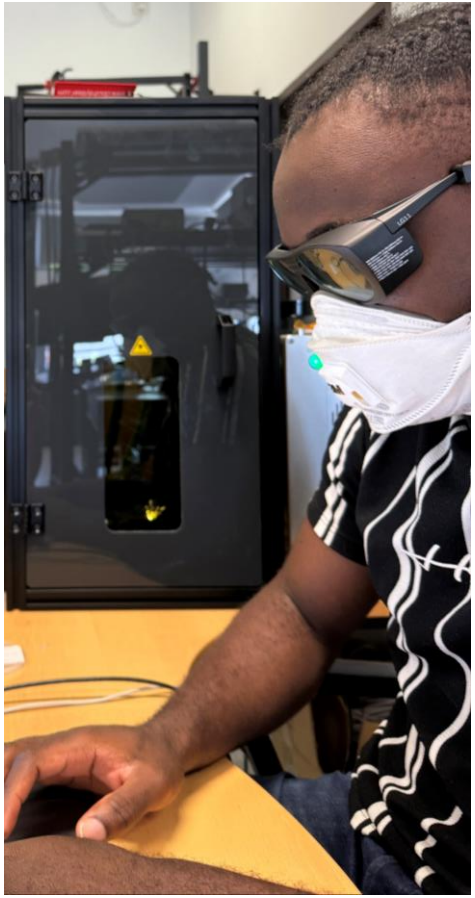
Selected projects, EC or nationally-funded:

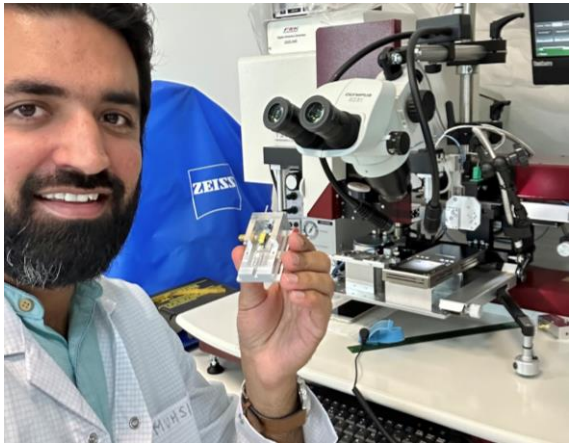
- TERAmeasure "Non-contact millimeter and Terahertz frequency measurement paradigm for instrumentation and sensing applications unlocking metrology-grade results" HORIZON 2020 (grant no. 862788)
- TERA6G "TERAhertz integrated systems enabling 6G Terabit-per-second ultra-massive MIMO wireless networks", 6GSNS (grant no. 101096949)
- IMPACT "Research for the **I**ntegration of novel **M**ultiplexed **P**hotonic and hyperspectral terahertz sensing **A**rchitectures in a microfluidic in-vitro system for monitoring **C**ancer drug **T**reatments", Misiones 2023 (grant no. MIG-20231023)
- Neotec "LEAPWAVE TECHNOLOGIES: enabling the communication networks for the future" Neotec 2023 (grant no. SNEO-20231331)

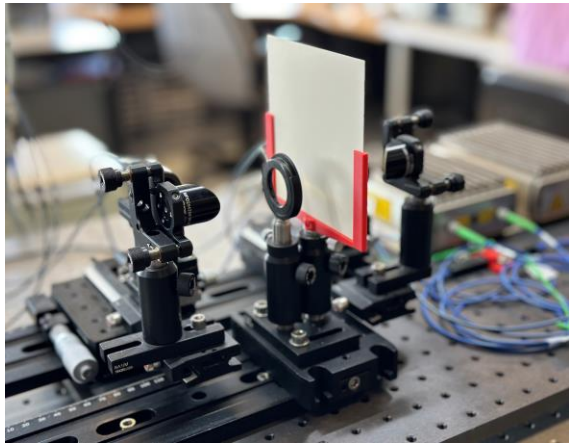
Topics of interest:

cognition and AI, computer vision and machine learning






ZEISS



Ailin

Industry node:
Med/health tech

Director:
Dra. Andrea Izquierdo, Data Lead

Company:
Ailin Health

Year of establishment:
2021

Number of employees:
10-19

Office locations in Europe
Madrid, Spain

Contact information:

Sectors of expertise:
Medical devices, Healthcare, software and IT services, wellness and fitness

Selected services or products (AI-powered or enabling AI):

- **Risk Identification and Diagnostics Software:** Our AI/ML algorithm integrates personalized biomarker analysis with lifestyle data to identify potential health risks and enhance early detection. This AI-driven solution provides a deeper understanding of each individual's health profile, enabling more proactive and effective healthcare interventions through diagnostics and lifestyle recommendations proposals.
- **Medical Diagnostics Reports:** This service securely retrieves and consolidates medical diagnostic reports, offering healthcare professionals comprehensive and current information. It provides detailed insights into patient disease risk factors and lifestyle data, thereby supporting more informed clinical decision-making. The service also includes a mechanism for delivering the reporting text to healthcare professionals, who can then validate and communicate this information to patients, ensuring they receive clear and relevant updates about their health.
- **Personalized Lifestyle Recommendations:** Our platform uses insights from biomarker analysis and diagnostic data to offer tailored lifestyle recommendations. These suggestions are designed to optimize health and prevent disease, helping individuals make informed choices about their diet, exercise, and overall wellness.
- **At-home lab testing platform:** We provide at-home diagnostic kits to be able to obtain real data from patients for different types of samples (blood, urine, swab etc). We provide the full service integrating logistics, laboratories and interpreted results.

Selected projects, EC or nationally-funded:

- Ailin, "Ailin: Servicios de analíticas de laboratorio con kits de auto-toma y apoyo al diagnóstico medico basado en modelos de IA para prevenir y cuidar mejor de la salud de las personas", CDTI (NEOTEC, grant no. SNEO-20231261), 2023-2027

Topics of interest:
Healthcare, Home monitoring, Diagnostics as a service, At-home lab testing, Machine learning, deep learning, natural language processing


Ailin


Ailin

Unit name:
ELLIS unit Alicante

Director(s):
Dr. Nuria Oliver

Coordinating organization(s):
ELLIS Alicante

Contact information:

Introduction:
ELLIS Alicante is the first ELLIS unit in Spain and the only ELLIS unit in the ELLIS network that has been created from scratch as a non-for-profit research foundation. It is also the only unit focused on responsible and ethical Artificial Intelligence (AI) for Social Good. We focus on fundamental research related to the intersection between humans and Artificial Intelligence and its potential for positive societal impact.

Link to introduction video

Unit members

Coordination:
- Rebeca de Miguel
- Cristina Gonzalez

Fellows:
- Nuria Oliver

Scholars:

Members:
- Erik Derner

Affiliated organizations(s):
- Generalitat Valenciana
- Intel Corporation
- Fundación Banco de Sabadell
- Nippon Gases
- Fundación Balearia
- Caixabank
- Fundación Esperanza Pertusa
- Mutualidda General de la Abogacía
- Universidad de Alicante
- IRCAI
- NAIXUS
- Distrito Digital Comunitat Valenciana
- Universidad de Tübingen
- Universidad Johannes Kepler Linz


ellis
ALICANTE


GOOD


ellis
ALICANTE


ellis

Unit name:
ELLIS unit Barcelona

Director(s):
Dr. Dimosthenis Karatzas

Prof. Carme Torras

Coordinating organization(s):
Universitat de Barcelona (UB)

Contact information:

Introduction:
The ELLIS Unit Barcelona brings together researchers from nine academic entities: the five major universities of Barcelona (Universitat Autònoma de Barcelona (UAB), Universitat Politècnica de Catalunya (UPC), Universitat de Barcelona (UB), Universitat Pompeu Fabra (UPF), Universitat Oberta de Catalunya (UOC)), as well as the four public research centers in the region focused on AI (Computer Vision Center (CVC), Institut de Robòtica i Informàtica Industrial (CSIC-UPC), Barcelona Supercomputing Center (BSC-CNS), Artificial Intelligence Research Institute (IIIA-CSIC)). It was created under the auspices and with the financial support of the Catalan government. The focus of the ELLIS unit in Barcelona lies on advancing fundamental research in machine learning and related fields (vision, robotics, natural language processing), and on ...(more at the website)

Link to introduction video

Unit members

Coordination:
- Meritxell Bassolas

Scholars:
- Gergely Neu
- Karina Gibert
- Jordi Gonzàlez
- Antonio M. López Peña
- Horacio Saggion
- Maria Vanrell

Fellows:
- Carlos Castillo
- Sergio Escalera
- Emilia Gómez

Members:
- Guillem Alenya
- Xavier Giró-i-Nieto
- Agata Lapedriza
- Gábor Lugosi
- Natasa Przulj
- Carles Sierra
- Cecilio Angulo Bahón
- Karim Lekadir
- Francesc M. Noguer
- Petia Radeva
- Petia Radeva
- Coloma Ballester

Affiliated organizations(s):
- Universitat Autònoma de Barcelona
- Universitat Politècnica de Catalunya
- Universitat de Barcelona
- Universitat Pompeu Fabra
- Universitat Oberta de Catalunya
- Computer Vision Center
- Institut de Robòtica i Informàtica Industrial
- Barcelona Supercomputing Center
- Artificial Intelligence Research Institute

Unit name:
ELLIS unit Madrid

Director(s):
Prof. Pedro Larrañaga

Prof. Concha Bielza

Coordinating organization(s):
Universidad Politécnica de Madrid

Contact information:

Introduction:
The ELLIS Unit Madrid is a partnership made up of professors and researchers in machine learning from the six public universities in Madrid: Universidad Autónoma de Madrid, Universidad Carlos III de Madrid, Universidad Complutense de Madrid, Universidad de Alcalá, Universidad Politécnica de Madrid and Universidad Rey Juan Carlos. The focus of the unit is to develop ground-breaking interpretable probability-based causal machine learning methods for dynamic scenarios and cross-cutting quantum technologies for intelligent systems. Successful application areas include biometrics, computer vision, healthcare, renewable energy, climate, robotics and intelligent vehicles.

Link to introduction video https://ellismadrid.es/wp-content/uploads/2023/11/20230526_ELLIS_final.mp4

Unit members

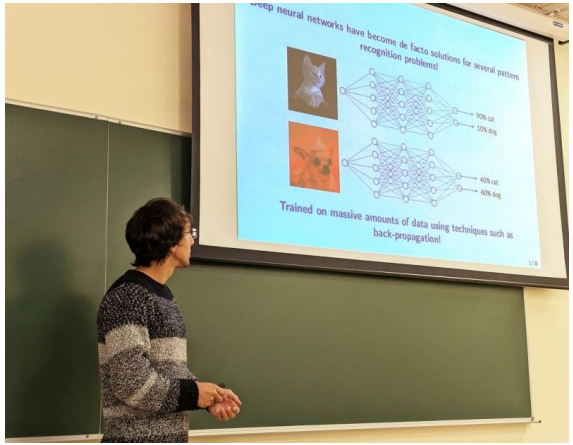
Coordination:
- Natalia Mamberto

Fellows:
- Miguel A. Martín Delgado
- Sancho Salcedo
- Concha Bielza
- Pedro Larrañaga

Scholars:
- Alberto Suárez
- Luis Baumela
- José M. Buenaposada
- Juan I. Godino Llorente
- Antonio G. Marques
- Aythami M. Moreno
- Sancho Salcedo-Sanz
- Ruben Tolosana

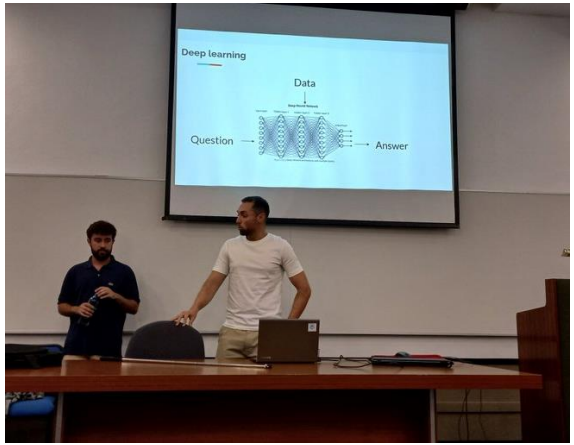
Members:
- Julián D. Arias Londoño
- Luis M. Bergasa
- Dan Casas
- Daniel H. Lobato
- Emilio P. Hernández
- Carmen Sánchez-Avila
- Ruben Vera-Rodriguez
- Antonio Artés
- Julian Fierrez
- M. Elena Hernando
- Pablo Martínez Olmos
- José Luis Rojo-Álvarez

Affiliated organizations(s):
- Universidad Autónoma de Madrid
- Universidad Carlos III de Madrid
- Universidad Complutense de Madrid
- Universidad de Alcalá
- Universidad Politécnica de Madrid
- Universidad Rey Juan Carlos


Deep neural networks have become de facto solutions for several pattern recognition problems!
90% cat
10% dog
40% cat
60% dog
Trained on massive amounts of data using techniques such as back-propagation!


Explanation Capabilities of Bayesian Networks in Dynamic Industrial Domains
Concha Bielza, Pedro Larrañaga
Computational Intelligence Group
Departamento de Inteligencia Artificial
Universidad Politécnica de Madrid


Asymmetric hidden Markov models and extensions applied to industry


Deep learning
Data
Question
Answer

UMEÅ UNIVERSITY

AI Policy Lab
at Umeå University

Research node:
Responsible AI Group
at the AI Policy Lab

Directors:
Prof. Virginia Dignum
Dr. J. C. Nieves, Dr. Lili Jiang
Dr. Monowar Bhuyan

Year of establishment:
2019

Number of researchers:
11-20

Parent organizations:
Umeå University

Contact information:

Topics of expertise

cognition and AI, automated reasoning and inference, ethical AI, heuristic search, human interfaces, knowledge representation, machine learning, multi-agent systems, natural language processing, planning and action

Selected publications, peer-reviewed

- L. Methnani, et al., "Who's in charge here? A survey on trustworthy AI in variable autonomy robotic systems", ACM Computing Surveys, 2024
- A. Aler Tubella, et al., "How to teach responsible AI in higher education: challenges and opportunities", Ethics Inf. Technol, 2024
- A. Brännström, et al., "A formal understanding of computational empathy in interactive agents", Cognitive Systems Research, 2024
- S. Lindgren, V. Dignum. "Beyond AI solutionism: toward a multi-disciplinary approach to artificial intelligence in society", Handbook of Critical Studies of Artificial Intelligence. Edward Elgar Publishing, 2023
- N. Khairova, et al., "A parallel corpus-based approach to the crime event extraction for low-resource languages", IEEE Access, 2023
- L. Methnani, et al., "Let me take over: Variable autonomy for meaningful human control", Frontiers in Artificial Intelligence, 2022

Selected projects, funded by the European Commission or national agencies

- AI Policy Lab, Wallenberg foundations, 2024-2028
- AEQUITAS, European Commission, HEU (grant no. 101070363), 2023-2026
- COMFORT, "COMputational Models FOR patienT stratification in urologic cancers", HEU, 2023-2026
- LEMUR, "Learning with Multiple Representations", MCSA (grant no. 101073307), 2023-2026
- EXPLAIN, "EXPLanatory interactive Artificial intelligence for Industry", ITEA, 2022-2025

Related study programmes, doctoral or master levels

- Master's Programme in Artificial Intelligence, Umeå University


Församlingshem


AI Policy Lab

WASP—HS

Research node:

Wallenberg AI, Autonomous Systems and Software Program – Humanity and Society (WASP-HS)

Directors:

Prof. Christofer Edling

Prof. Helena Lindgren

Prof. Ericka Johnson

Year of establishment:

2019

Number of researchers:

101+

Parent organizations:

Umeå University

Contact information:

Topics of expertise

cognition and AI, automated reasoning and inference, case-based reasoning, commonsense reasoning, computer vision, constraint processing, ethical AI, heuristic search, human interfaces, intelligent robotics, knowledge representation, machine learning, multi-agent systems, natural language processing, planning and action, and reasoning under uncertainty

Selected publications, peer-reviewed

- C. Öhman. "The afterlife of data: What happens to your information when you die and why you should care", Chicago: University of Chicago Press, 2024.
- S. Larsson, et al., "Towards a socio-legal robotics: A theoretical framework on norms and adaptive technologies," International Journal of Social Robotics, 2023.
- J. Ivarsson, O. Lindwall, "Suspicious minds. The problem of trust and conversational agents," Computer Supported Cooperative Work, 2023.
- B. Brown, et al., "The Halting problem: Video analysis of self-driving cars in traffic," Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems, 2023.
- K. Winkle, et al., "Feminist human-robot interaction: Disentangling power, principles and practice for better, more ethical HRI," Proceedings of the 2023 ACM/IEEE International Conference on Human-Robot Interaction, 2023.
- L. Colonna, "Addressing the responsibility gap in data protection by design: Towards a more future-oriented, relational, and distributed approach," Tilburg Law Review, 2022.

Selected projects, funded by the European Commission or national agencies

- WASP-HS, Marianne and Marcus Wallenberg Foundation, 2024-2028
- WASP HS, Marcus and Amalia Wallenberg Foundation, 2024-2028
- WASP Humanities and Society (WASP-HS), Knut and Alice Wallenberg Foundation, 2020
- WASP Humanities and society (WASP-HS), Marianne and Marcus Wallenberg Foundation, 2019-2023
- WASP Humanities and society (WASP-HS), Marcus and Amalia Wallenberg Foundation, 2019-2023

Related study programmes, doctoral or master levels

- WASP-HS Graduate School, National PhD Program


WASP—HS
AI for Humanity & Society
Conference 2022


WASP—HS

Research node:
Centre for Artificial Intelligence

Directors:
Prof. Dr. Thilo Stadelmann
Prof. Dr. Frank-Peter Schilling

Year of establishment:
2021

Number of researchers:
21-50

Parent organizations:
Zurich University of Applied Sciences

School of Engineering

Contact information:

Topics of expertise
computer vision, natural language processing

Selected publications, peer-reviewed

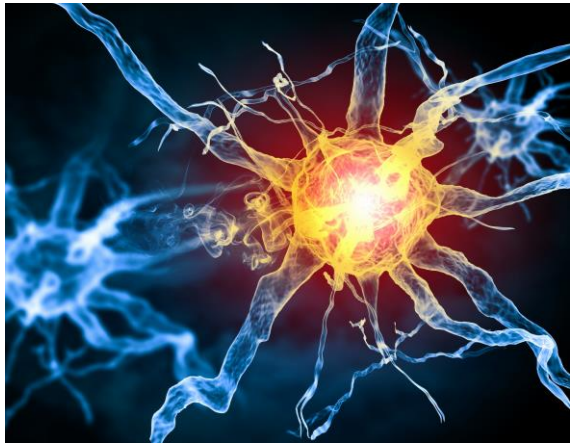
- L. Tuggener, et al., "Real world music object recognition", Transactions of the International Society for Music Information Retrieval, 2024
- C. König, et al., "Safe risk-averse Bayesian optimization for controller tuning", IEEE Robotics and Automation Letters, 2023
- M. Amirian, et al., "Mitigation of motion-induced artifacts in cone beam computed tomography using deep convolutional neural networks", Medical Physics, 2023
- J. Segessenmann, et al., "Assessing deep learning: a work program for the humanities in the age of artificial intelligence", AI and Ethics, 2023
- T. Stadelmann, et al., "Data centrism and the core of data science as a scientific discipline", Archives of Data Science, Series A, 2022
- J. M. Deriu, et al., "Survey on evaluation methods for dialogue systems", Artificial Intelligence Review, 2021

Selected projects, funded by the European Commission or national agencies

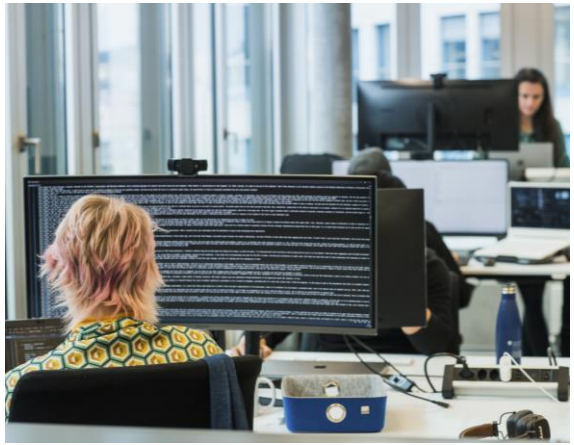
- AI4REALNET "AI for REAL-world NETwork operation", Horizon Europe (grant no. 101119527), 2023-2027
- DISTRAL "Industrial Process Monitoring for Injection Molding with Distributed Transfer Learning", Innosuisse (grant no. 62174.1 IP-ENG), 2022-2025
- UniVal "Unified Model for Evaluation of Text Generation Systems", Swiss National Science Foundation (grant no. 219819), 2024-2026
- certAInty "A Certification Scheme for AI systems", Innosuisse (grant no. 101.650 IP-ICT), 2023-2024

Related study programmes, doctoral or master levels

- Master of Science in Engineering, Zurich University of Applied Sciences
- PhD Programme in Data Science, University of Zurich




AWARD



IDSIA
Dalle Molle Institute for Artificial Intelligence
SUPSI USI

Research node:

Dalle Molle institute for Artificial Intelligence (IDSIA USI-SUPSI)

Directors:

Prof Dr Andrea Emilio Rizzoli

Year of establishment:

1988

Number of researchers:

101+

Parent organizations:

USI-Università della Svizzera italiana

SUPSI-Scuola universitaria professionale della Svizzera italiana

Contact information:

Topics of expertise

automated reasoning and inference, computer vision, ethical AI, heuristic search, intelligent robotics, machine learning, natural language processing, reasoning under uncertainty

Selected publications, peer-reviewed

- G. Abbate, et al., "A. self-supervised prediction of the intention to interact with a service robot. robotics and autonomous systems", Robotics and Autonomous Systems, 2024
- F. M. Bianchi, et al., "Graph neural networks with convolutional ARMA filters", IEEE Transactions on Pattern Analysis and Machine Intelligence, 2022
- J. Schmidhuber, "Deep learning in neural networks: An overview.", Neural Networks, 2015
- A. Giusti, et al. "A machine learning approach to visual perception of forest trails for mobile robots", IEEE Robotics and Automation Letters, 2015
- S. Legg, M. Hutter, "Universal intelligence: A definition of machine intelligence", Minds and Machines, 2007
- S. Hochreiter, J. Schmidhuber, "Long short-term memory", Neural Computation, 1997

Selected projects, funded by the European Commission or national agencies

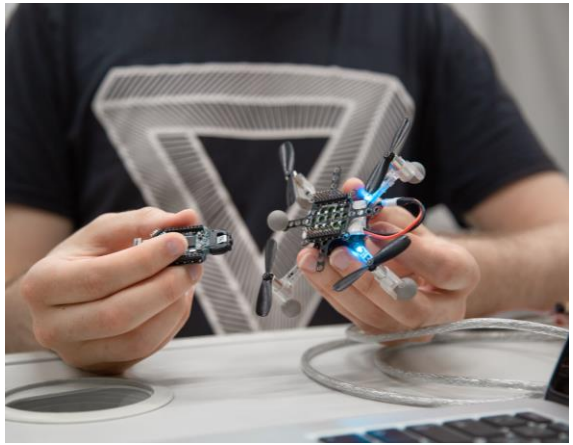
- AlgoRNN "Recurrent Neural Networks and Related Machines That Learn Algorithms", European Research Council (grant no. 742870), 2017-2024.
- ProbFore "Probabilistic Forecasting: Global Models, Gaussian Processes and Hierarchies", Swiss National Science Foundation (grant no. 212164), 2023-2027
- HORD GNN "Higher-Order Relations and Dynamics in Graph Neural Networks", Swiss National Science Foundation (grant no. 204061), 2022-2026.
- ARTISTIC "ARTIficial Intelligence for real-time quality eSTImation and Control in laser cutting", Innosuisse (grant no. 41939.1 IP-ENG), 2020-2023

Related study programmes, doctoral or master levels

- Doctoral studies at the Faculty of Informatics USI
- Master in Artificial Intelligence at USI








Unit name:
ELLIS unit Lausanne

Director(s):
Prof. Pascal Frossard

Coordinating organization(s):
EPFL

Contact information:

Introduction:
The ELLIS Unit Lausanne brings together researchers working on various aspects of artificial intelligence (AI). Its interdisciplinary research approach and broad applications cross the boundaries of schools at EPFL and create opportunities for direct interactions with the Swiss industry and society. Furthermore, the Lausanne unit contributes to ELLIS's overarching mission to develop education and ensure the highest level of AI research through e.g., summer schools and PhD student co-supervision and exchanges. Hosted within the EPFL AI Center, the Lausanne unit reaches out to diverse application domains such as machine learning, robotics, health, biomedicine and many more. At the core of the EPFL AI Center lies a vision for a future where AI works for everyone, driven by cutting-edge research, education and collaboration... (more at the website)

Link to introduction video

Unit members

Coordination:
Nicolas Machado •

Fellows:
David Atienza •
Aude Billard •
Michele Ceriotti •
Volkan Cevher •
Dario Floreano •
Pascal Fua •
Wulfram Gerstner •
Martin Jaggi •
Negar Kiyavash •
Florent Krzakala •
Sofia Olhede •
Sabine Süsstrunk •
Devis Tuia •
Lenka Zdeborová •
Pascal Frossard •

Scholars:
Alexandre Alahi •
Giuseppe Carleo •
Mackenzie Mathis •
Amir Zamir •
Dorina Thanou •

Members:
Charlotte Bunne •
Behzad Bozorgtabar •
Grigorios Chrysos •
Nicolas Flammarion •
Matthias Grossglauser •
Maryam Kamgarpour •
Tanja Käser •
Mathieu Salzmann •

Affiliated organizations(s):
EPFL AI Center •


EPFL
#epflcampus

Unit name:
ELLIS unit Zürich

Director(s):
Prof. Andreas Krause

Coordinating organization(s):
ETH AI Center

Contact information:

Introduction:
The ELLIS unit Zürich is implemented through the ETH AI Center, which comprises over 110 faculty members encompassing nearly all of the departments at ETH Zurich, alongside associated researchers from other institutions such as the University of Zurich. This unit focuses on theoretical and methodological aspects of machine learning and emphasizes the use of ML in health, life sciences, environmental sciences, and human-machine interaction. The range of research areas includes: (1) Theoretical and methodological foundation for reliable and trustworthy ML (e.g. inductive bias of deep networks, fairness/ transparency/ robustness, causality, reinforcement learning), (2) Machine learning for Personalized Health, (3) Interactional intelligence and computational pragmatics and (4) Machine Learning for Remote Sensing and Environmental Modelling.

Link to introduction video https://youtu.be/vu5eycsxKMQ

Unit members

Coordination:
- Alexander Ilic

Fellows:
- Luc Van Gool
- Joachim M. Buhmann
- Rico Sennrich
- Niko Beerenwinkel
- Martin Vechev
- Otmar Hilliges
- Gunnar Rätsch
- Sereina Riniker
- Davide Scaramuzza
- Konrad Schindler
- Thomas Hofmann

Scholars:
- Niao He
- Valentina Boeva
- Siyu Tang
- Jonas Peters
- Ryan Cotterell
- Torsten Hoefler
- Theodora Kontogianni
- Nicolai Meinshausen
- Martin R. Oswald
- Fernando Perez-Cruz
- Radu Timofte
- Daniel Barath
- Fanny Yang
- Fisher Yu

Members:
- Giorgia Ramponi
- Marc Pollefeys
- Mrinmaya Sachan
- Marco Hutter
- Christian Holz
- Anna Klimovskaia-Susmelj
- Neda Davoudi
- Carl Allen
- Francis Engelmann
- Shkurta Gashi
- Mario Giulianelli

Affiliated organizations(s):
- ETH Zurich
- ETH AI Center
- CSCS Swiss National Supercomputing Centre
- University of Zurich


ETH AI CENTER

Research node:
Artificial Intelligence Application and Research Center

Directors:
Prof. Dr. Erbug Celebi

Year of establishment:
2020

Number of researchers:
11-20

Parent organizations:
Cyprus International University

Contact information:

Topics of expertise

automated reasoning and inference, case-based reasoning, computer vision, human interfaces, intelligent robotics, natural language processing

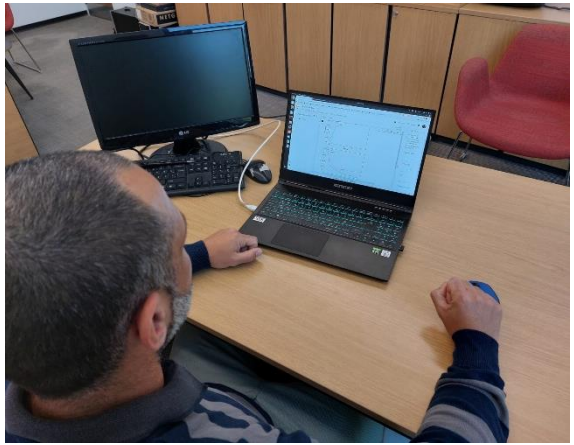
Selected publications, peer-reviewed

- U. Zeki, et al., "Person-dependent handwriting verification for special education using deep learning", Intelligent Automation & Soft Computing, 2023
- S. M. Jiddah, K. Yurtkan. "Dominant and complementary emotion recognition ssing hybrid recurrent neural network", Signal, Image and Video Processing, 2023
- K. Zaman, et al., "A survey of audio classification using deep learning", IEEE Access, 2023
- H. Salaudeen, E. Çelebi, "Pothole detection using image enhancement GAN and object detection network", MDPI Electronics, 2022
- E. Özbılge, et al., "Tomato disease recognition using a compact convolutional neural network", IEEE Access, 2022
- S. Muhammed, E. Çelebi, "CAMNet: DeepGait feature extraction via maximum activated channel localization", Intelligent Automation & Soft Computing, 2021

Selected projects, funded by the European Commission or national agencies

Related study programmes, doctoral or master levels

- Master on Computer Engineering, Cyprus International University
- PhD in Computer Engineering, Cyprus International University



IZMIR DEMOCRACY UNIVERSITY

AIDA

ARTIFICIAL INTELLIGENCE AND DATA ANALYTICS RESEARCH AND APPLICATION CENTER

Research node:

Artificial Intelligence and Data Analytics Research and Application Center

Directors:

Prof. Dr. Devrim Ünay

Assoc. Prof. Dr. Osman Büyük

Year of establishment:

2020

Number of researchers:

11-20

Parent organizations:

Izmir Democracy University

Contact information:

Topics of expertise

cognition and AI, automated reasoning and inference, case-based reasoning, computer vision, heuristic search, human interfaces, intelligent robotics, knowledge representation, machine learning, multi-agent systems, natural language processing, planning and action

Selected publications, peer-reviewed

- R. Soyak, et al., “Channel attention networks for robust MR fingerprint matching”, IEEE Transactions on Biomedical Imaging, 2022
- C. Demiroglu, et al., "Postprocessing synthetic speech with a complex cepstrum vocoder for spoofing phase-based synthetic speech detectors", IEEE Journal of Selected Topics in Signal Processing, 2017
- B Bozkurt, et al., “A study of time-frequency features for CNN-based automatic heart sound classification for pathology detection”, Computers in Biology and Medicine, 2018
- M. Lucidi, et al., “SSNOMBACTER: A collection of scattering-type scanning near-field optical microscopy and atomic force microscopy images of bacterial cells”, GigaScience, 2020
- E. Bogar, S. Beyhan, "Adolescent Identity Search Algorithm (AISA): A novel metaheuristic approach for solving optimization problems." Applied Soft Computing, 2020

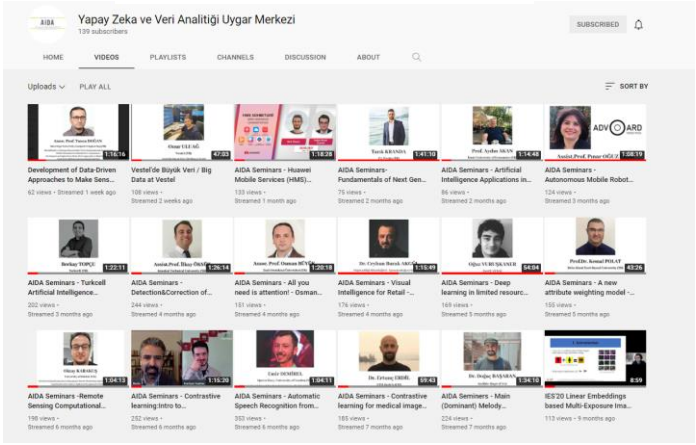
Selected projects, funded by the European Commission or national agencies

- “Automatic Music Student Performance Assessment System Design for Online Music Education”, TÜBİTAK ARDEB 1001. 2021-2023
- “Development of Image Processing and Machine Learning based Tools for Analysis of Phase-Contrast Optical Microscopy Time Series Images“, TÜBİTAK ARDEB 1001, 2020-2023
- “A new Network of European BioImage Analysts to advance life science imaging (NEUBIAS)”, European Commission(EU Cost Action), 2016-2020
- “Automatic Transcription of Turkish music”, TÜBİTAK ARDEB 1001. 2007-2010

Related study programmes, doctoral or master levels

- Ph.D. in Electrical-Electronics Engineering, Izmir Democracy University
- M.Sc. in Electrical-Electronics Engineering, Izmir Democracy University

Youtube AIDA Seminars



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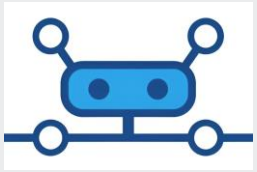


Research node:

Robotics and Artificial Intelligence Laboratories (ROYAL)

Directors:

Prof. H. Işıl Bozma

Assoc. Prof. Evren Samur

Assoc. Prof. Emre Ugur

Year of establishment:

2019

Number of researchers:

21-50

Parent organizations:

Bogazici University

Contact information:

Topics of expertise

computer vision, intelligent robotics

Selected publications, peer-reviewed

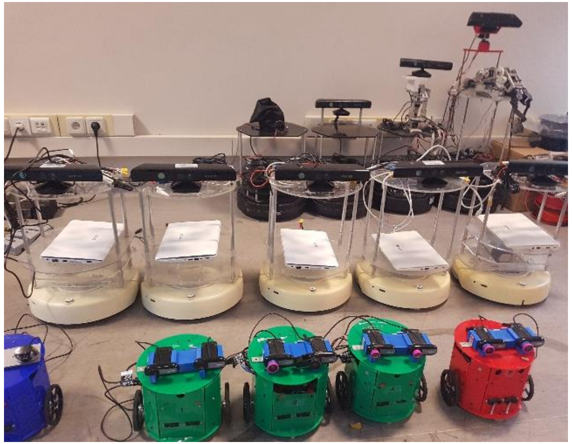
- E. Samur, et al., "A robotic indenter for minimally invasive measurement and characterization of soft tissue response". Medical Image Analysis, 2007
- C. S. Karagöz, et al., "Coordinated navigation of multiple independent disk-shaped robots", IEEE Transactions on Robotics, 2014
- K. Karacan, et al., "An environment recognition and parameterization system for shared-control of a powered lower-limb exoskeleton", Int Conf Biomedical Robotics and Biomechatronics, 2020
- C. Tutcu, et al., "Quasi-static modeling of a novel growing soft-continuum robot", The International Journal of Robotics Research, 2021
- M. Y. Seker, et al., "Conditional neural movement primitives", Robotics: Science and Systems, 2019

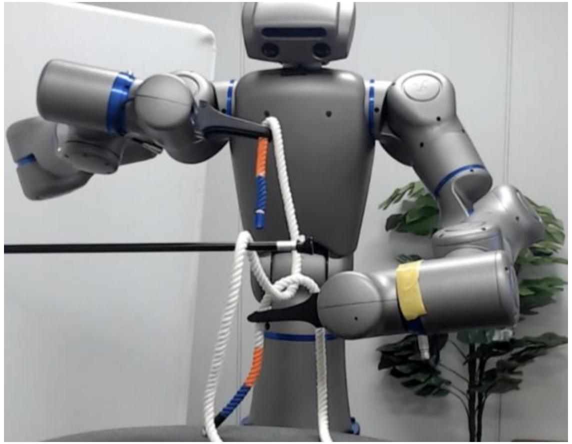
Selected projects, funded by the European Commission or national agencies

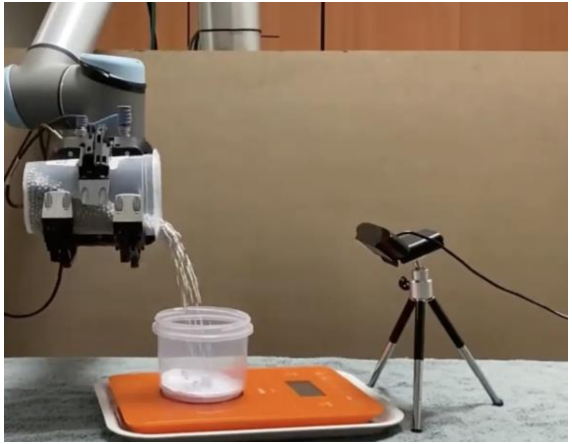
- SHEREC "Safe, Healthy and Environmental Ship Recycling", European Union, HORIZON (grant no. 101136056), 2024-2027
- INVERSE "INteractive robots that intuitiVely lEarn to inVErt tasks by ReaSoning about their Execution", European Union, HORIZON (grant no. 101136067), 2024-2028
- IMAGINE, "Robots Understanding Their Actions by Imagining Their Effects", European Union, H2020 (grant no. 731761), 2017-2022
- An Event-Driven Approach to Autonomous Assembly, TÜBİTAK-NSF International Program, 2000-2004
- Visual Cognition Based Robot Navigation Among Varying-Scale Places, 2015-2018. Funding agency: TÜBİTAK, 2015-2018

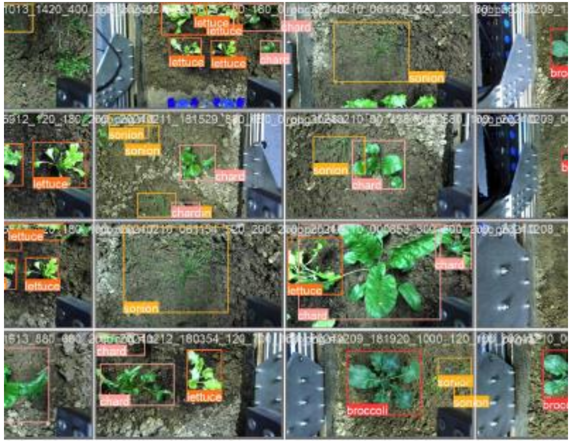
Related study programmes, doctoral or master levels

- Electrical and Electronics Engineering, Mechanical Engineering, Computer Engineering, Bogazici University (MSc & PhD)
- Cognitive Science, Bogazici University (MA)








lettuce
chard
sonion
broccoli

Research node:
Robotics and Artificial Intelligence Laboratory

Directors:
Prof. Dr. Aysegul Ucar

Year of establishment:
2017

Number of researchers:
1-10

Parent organizations:
Firat University

Contact information:

Topics of expertise

cognition and AI, computer vision, intelligent robotics, machine learning, multi-agent systems, planning and action, reasoning under uncertainty

Selected publications, peer-reviewed

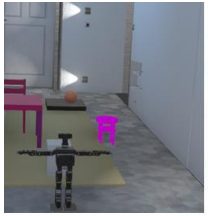
- S. Aslan, et al., "New CNN and hybrid CNN-LSTM models for learning object manipulation of humanoid robots from demonstration", Cluster Computing, pp. 1-16, 2021
- S. Aslan, et al., "New convolutional neural network models for efficient object recognition with humanoid robots", Journal of Information and Telecommunication, vol. 6, no.1, pp. 63-82, 2022
- S. Aslan, et al., "Learning to Move an Object by the Humanoid Robots by Using Deep Reinforcement Learning", Intelligent Environments, IOS Press, pp. 143-155, 2021

Selected projects, funded by the European Commission or national agencies

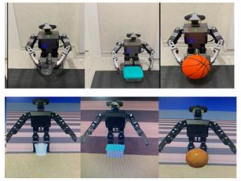
- "Development of a new deep learning algorithm for the training of humanoid robots", The Scientific and Technological Research Council of Türkiye (Tubitak), (1003, grant no. 117E589), 2017-2020

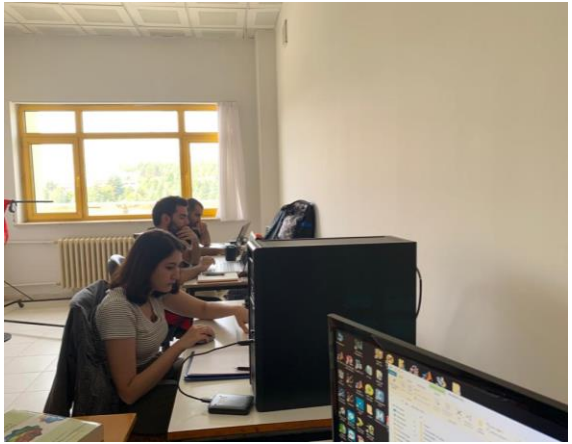
Related study programmes, doctoral or master levels

- M.Sc. and Ph.D. in Mechatronics Engineering, Firat University








Research node:
AI Research Group at AGU

Directors:
Kasim Tasdemir
Bulent Yilmaz
Cagri Gungor

Year of establishment:
2020

Number of researchers:
1-10

Parent organizations:
Abdullah Gul University

Contact information:



Topics of expertise

automated reasoning and inference, computer vision, machine learning

Selected publications, peer-reviewed

- Y. Yan, et al., "A continuously benchmarked and crowdsourced challenge for rapid development and evaluation of models to predict COVID-19 diagnosis and hospitalization". JAMA Netw Open., vol. 4, no. 10, 2021
- Y. Gormez, et al., "A deep learning approach with Bayesian optimization and ensemble classifiers for detecting denial of service attacks", International Journal of Communication Systems, vol. 33, no. 11, pp. e4401, 2020
- F. Uslu, et al., "Image-analysis based readout method for biochip: Automated quantification of immunomagnetic beads, micropads and patient leukemia cell", Micron, vol. 133, pp. 102863, 2020
- U. Yilmaz, et al., "Data mining techniques in direct marketing on imbalanced data using Tomek link combined with random under-sampling." International Conference on Information System and Data Mining, pp. 67-73, 2021
- M. Bicakci, et al., "Metabolic imaging based sub-classification of lung cancer" IEEE Access, 2020
- K. Tasdemir, A. E. Cetin, "Content-based video copy detection based on motion vectors estimated using a lower frame rate". Signal, Image and Video Processing, vol. 8, no. 6, pp. 1049-1057, 2014

Selected projects, funded by the European Commission or national agencies

- "Artificial Intelligence Assisted Prognostic Marker Determination from Colonoscopy and Histopathology Images for Colon Polyps", The Scientific And Technological Research Council Of Türkiye (Tubitak-1001), 2021-2023
- "AI Based Traffic Light Signalisation Optimisation", The Scientific And Technological Research Council Of Türkiye (TEYDEB-1007), 2021-2023
- "Determination of the weight perception of the object to be lifted in preparation of the bionic hand to the activity by brain signals", The Scientific And Technological Research Council Of Türkiye (Tubitak, 1001), 2020-2022
- "Text Classification Using Complete Subgraphs Generated Over N-Grams", The Scientific And Technological Research Council Of Türkiye (Tubitak-3501), 2022-2024

Related study programmes, doctoral or master levels

- PhD in Electrical and Computer Engineering, Abdullah Gul University
- MSc in Electrical and Computer Engineering, Abdullah Gul University

AI Research Group at AGÜ

Research node:
Artificial Intelligence Research Group at Bogazici University

Directors:
Prof. L. Akarun, Dr. I. Baytas
Prof. T. Gungor, Dr. A. Ozgur
Dr. S. Uskudarli, Dr. E. Ugur

Year of establishment:
2002

Number of researchers:
21-50

Parent organizations:
Boğaziçi Üniversitesi

Contact information:

Topics of expertise

cognition and AI, computer vision, human interfaces, intelligent robotics, machine learning, natural language processing

Selected publications, peer-reviewed

- O. Hakime, et al., "DeepDTA: Deep drug–target binding affinity prediction" Bioinformatics, 2018
- C. R. Aydin, T. Güngör, "Combination of recursive and recurrent neural networks for aspect-based sentiment analysis using inter-aspect relations", IEEE Access, 2020
- O. Alptekin, L. Akarun, "Neural sign language translation by learning tokenization." IEEE International Conference on Automatic Face and Gesture Recognition (FG), 2020
- I. M. Baytas, et al., "Patient subtyping via time-aware LSTM networks." ACM SIGKDD international conference on knowledge discovery and data mining, 2017
- M. Y. Seker, et al., "Conditional neural movement primitives", Robotics: Science and Systems, 2019
- O. Güngör, et al., "The effect of morphology in named entity recognition with sequence tagging", Natural Language Engineering, 2019

Selected projects, funded by the European Commission or national agencies

- IMAGINE "Robots Understanding Their Actions by Imagining Their Effects", European Commission (grant no. 731761), 2017-2022
- BIOLITCONTEXTMINING "Contextual Text Mining from the Biomedical Scientific Literature", European Commission (grant no. 304153), 2012-2016
- DEEPSYM "Abstract Reasoning and Life-Long Learning via symbol and rule discovery", Scientific and Technological Research Council of Türkiye (grant no. 120E274), 2021-2024
- OpenMaker "Harnessing the power of Digital Social Platforms to shake up makers and manufacturing entrepreneurs towards a European Open Manufacturing ecosystem", European Commission (grant no. 687941), 2016-2018

Related study programmes, doctoral or master levels

- M.Sc. and Ph.D. in Computer Science, Bogazici University
- M.A. in Cognitive Science, Bogazici University


QUICK


DEV

Industry unit:
AI R&D Center

Head/Director:
Mustafa Fatih ŞEN

Parent organization:
ANKAGEO

Year of establishment:
2009

Number of employees:
10-49

Office locations in Europe:
Istanbul, Türkiye

Contact information:

Sectors of expertise

corporate services, information technologies, map production

Selected products or services

- The **Smart Junction Management System**, employs AI technology for precise detection and classification of vehicle movements within the area. By utilizing advanced algorithms, it accurately identifies various vehicle types, such as cars, trucks, bicycles, and pedestrians. This data enables efficient traffic flow optimization and enhances safety measures at intersections. Through this system help trafic engineers to improves overall transportation efficiency.

- The **AI Mapper**, this system automatically detect and blur faces and license plates captured in images, ensuring privacy and compliance with regulations. Through advanced image processing techniques, the system accurately identifies and obscures sensitive information while maintaining data integrity. Additionally, it incorporates AI-powered road anomaly detection capabilities, streamlining data extraction and analysis processes for improved efficiency.

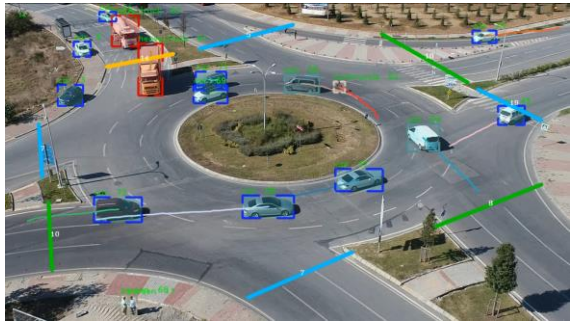
Use cases of interest (future applications, challenges, desired improvements using AI)

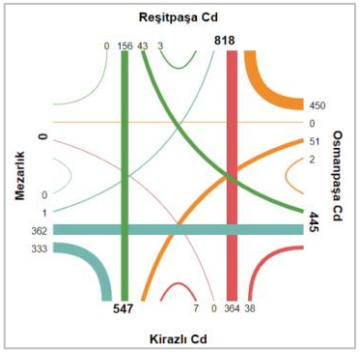
- In traditional methods, human operators manually conduct these counts, a time-consuming process. Our system revolutionizes this by enabling deep analysis and generating reports for specific sections of the junction and chosen timeframes, significantly enhancing efficiency and accuracy.

- In mobile mapping, digitizing data is often time-consuming. Our advanced algorithm accelerates this process, extracts data faster, prioritizes security through bluring sensetive data like faces and plates. This not only speeds up data processing but also ensures privacy compliance. By combining these features, our solution improves performance and security in mobile mapping applications. We can also create report for given road section and anomaly type.

Data for learning and testing purposes

- We labeled the data ourself.

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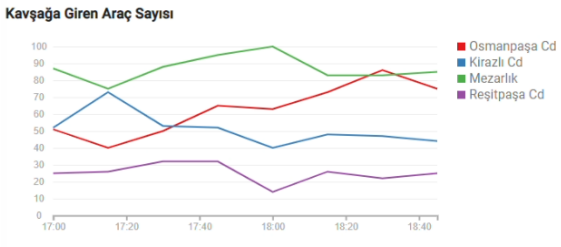
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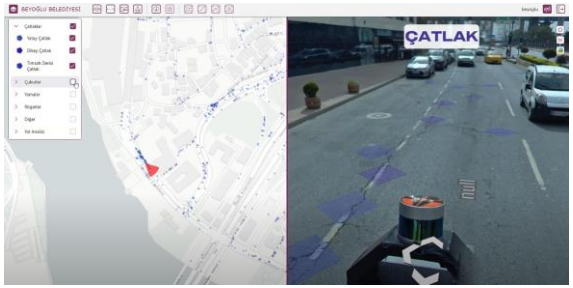
Reşitpaşa Cd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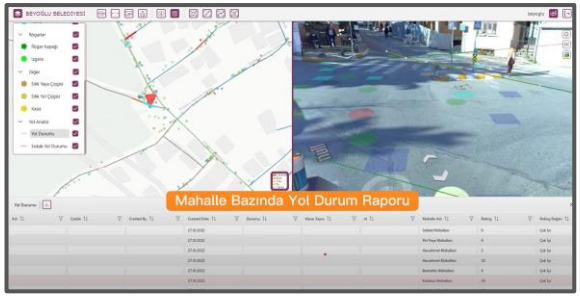

Mahalle Bazında Yol Durum Raporu

Industry node:
Metal (Low Carbon Flat Steel)

Director:
Saygın KAÇAR, Smart Production Technologies Manager

Company:
Borçelik Steel Industry Trade Inc.

Year of establishment:
1990

Number of employees:
250+

Office locations in Europe
Bursa, Türkiye

Contact information:

Sectors of expertise:
Manufacturing

Selected services or products (AI-powered or enabling AI):

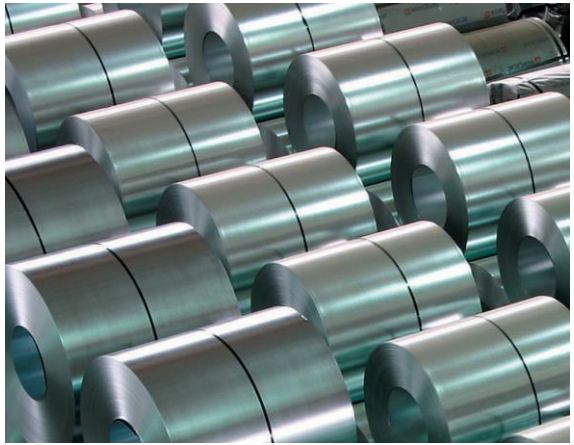
- Hop Dipped Galvanized Flat Steel: They are flat steels galvanized by continuous hot dip method.
Zinc / galvanized coating is applied on surface of flat steel materials in order to protect them against corrosion. Flat steel is heated and introduced into melt zinc pot and is bound by establishing a chemical link onto zinc / galvanized coating surface. Galvanized coating provides steel products with corrosion resistance and cathodic protection.
- Cold Rolled Flat Steel: They are flat steels manufactured by cold rolling of pickled and oiled hot-rolled flat steels. "Cold-Rolled Steel" is obtained by application of surface cleaning, recrystallization annealing, surface roughening and tempering operations following completion of the rolling process.
By our different qualities and grades obtained thanks to cold-rolling, annealing and tempering operations, we are able to meet special demands of end users as well.
- Steel Service Center: We offer many industrial steel service center advantages with our Kerim Çelik brand such as providing final sized products to our customers, providing services in accordance with their usage areas and needs, and reducing additional operations.

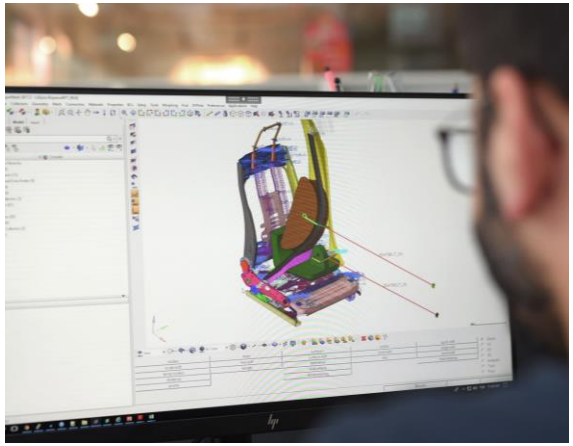
Selected projects, EC or nationally-funded:

- Development of a Steel Surface Nonconformity Control System with Pre-trained Deep Learning Based Anomaly and Object Detection Models, 3237007, Scientific and Technological Research Council of Türkiye, 1.01.2024-31.12.2025
- ReDim, Non-linear Dimensionality Reduction using recycling Krylov subspaces with applications to the Industrial Internet of Thing (IIoT) Data, 221N220, TÜBİTAK-France Bosphorus Bilateral Cooperation Program, 22.01.2022-2024
- SMEEMS-SI, Smart Energy-Efficient Manufacturing System for Steel Industry, HORIZON 2020,IraSME,553354, 1.09.2020-31.11.2021
- IS4SE, Industrial Sensing for Smarter Europe, EUREKA / EURIPIDES, 17-0903, 1.01.2020-01.06.2023
- Galvanizing Line Process Modeling and Digital Twin Development, 3180480, Scientific and Technological Research Council of Türkiye, 21.08.2019-08.12.2021

Topics of interest:
Smart manufacturing, machine learning, computer vision, digital twin, sustainability


BORÇELİK






BORÇELİK

Industry node:

Innovation & Product and Service Development Directorate, Technology Division

Director:

Dr. Mehmet Özdem, Director for Innovation & Product and Service Development

Company:

Türk Telekom

Year of establishment:

1994

Number of employees:

250+

Office locations in Europe

Ankara, Türkiye (HQ); Istanbul, Türkiye (HQ)

Contact information:

Sectors of expertise:

entertainment, media and communications, software and IT services

Selected services or products (AI-powered or enabling AI):

- IPTV Service: Türk Telekom Group is Türkiye's world-class, first and largest integrated telecom operator offering its customers the complete range of mobile, broadband, data, TV and fixed voice services as well as innovative convergence technologies. Adopting a "customer-oriented" and integrated structure in order to respond to the rapidly changing communication and technology needs of customers in the most powerful and accurate way, we develop AI-based services for Turk Telekom's IPTV Platform branded as tivibu. In particular, AI is extensively used in recommendation and targeted advertisement services for a more personalized and engaging TV experience.
- Digital Music Service: Recent industry trends demonstrate that telecommunication service providers embrace streaming music platforms as a natural extension of their premium offering to their customers, which has resulted in the creation of the Muud music service of Turk Telekom. Similar to the IPTV solution, we use AI to make Turk Telekom's Muud more personalized for the subscribers by recommending those songs and artists that are in line with their previous preferences. Another potential future feature of the Muud platform is to mirror the current «mood» of the listener, and if needed, quickly improve it through specific choices of music as enabled by AI technologies.
- Electronic Magazine Reader Service: A reader for magazines «e-dergi» is another media service application by Turk Telekom, which does not require subscribers to be Turk Telekom customers. One of the major advantages of e-dergi for Turk Telekom mobile customers is that the application does not consume any data from their existing data plan. However, the most appealing attribute of the magazine platform will be the AI-powered personalization and recommendation capability we are currently working on, which will automatically select and display the most relevant content for the subscribers according to their previous interactions with the application, also taking into account their locations and the exact time of day.

Selected projects, EC or nationally-funded:

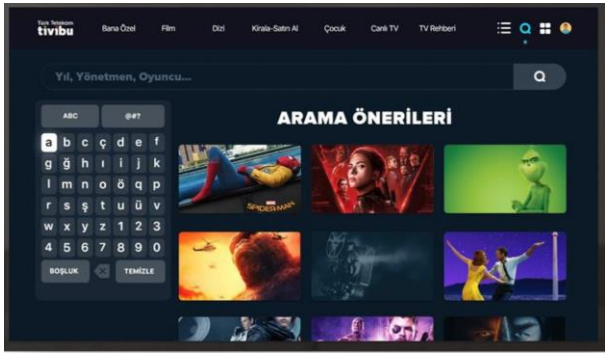
- "AI-Based Context-Aware Video Content Enrichment Project", The Scientific and Technological Research Council of Türkiye (TÜBİTAK, grant no. 3235014), 2023-Present
- "AI-Based Personalized Movie Poster Generation Project", The Scientific and Technological Research Council of Türkiye (TÜBİTAK, grant no. 3225028), 2022-2023
- PAPUD "Profiling and Analysis Platform Using Deep Learning", ITEA 3 (grant no. 16037), 2018-2020

Topics of interest:

automated reasoning and inference, computer vision, human interfaces, machine learning, natural language processing, generative AI

Türk Telekom tivibu

e-dergi



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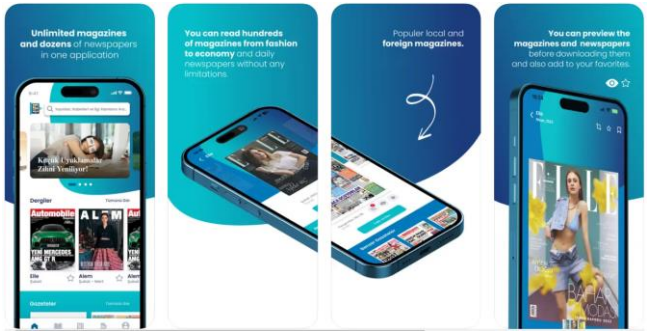


Unit name:
ELLIS Associate unit Lviv

Director(s):
Dr Rostyslav Hryniv

Coordinating organization(s):
Ukrainian Catholic University

Contact information:

Introduction:
The ELLIS Associate Unit in Lviv is based at the Faculty of Applied Sciences (FAS) of the Ukrainian Catholic University (UCU). Its objectives include promoting top-tier research within the country, attracting skilled professionals, and further integrating both Ukrainian researchers and companies into the broader European AI community. The unit's research fields include machine learning with applications to 3D computer vision, embodied AI and indoor robot navigation, natural language processing with emphasis on low-resource languages, biology and medical imaging, text mining and knowledge discovery in natural language texts, and responsible AI.

Link to introduction video

Unit members

Coordination:
- Andriy Hrynykha

Scholars:

Fellows:

Members:
- Vadim Ermolayev
- Igor Krashenyi
- Tetiana Zakharchenko
- Oles Dobosevych (Associate)
- Tetiana Martynyuk (Associate)
- Ruslan Partsey (Associate)

Affiliated organizations(s):


Штучний інтелект:
формування меж допустимого

Research node:

Cardiff Centre for Artificial Intelligence, Robotics and Human-Machine Systems

Directors:

Prof. Rossitza Setchi

Prof. Stuart Allen

Prof. Dylan M Jones

Year of establishment:

2019

Number of researchers:

51-100

Parent organizations:

Cardiff University

Contact information:

Topics of expertise

cognition and AI, automated reasoning and inference, commonsense reasoning, computer vision, ethical AI, human interfaces, intelligent robotics, knowledge representation, machine learning, multi-agent systems, reasoning under uncertainty

Selected publications, peer-reviewed

- R. Setchi, et al., "Artificial intelligence for patent prior art searching", World Patent Information, 2021
- X. Yang, et al., "Hierarchical reinforcement learning with universal policies for multi-step robotic manipulation", IEEE Transactions on Neural Networks and Learning Systems, 2021
- S. Gao, et al., "Learning ADL daily routines with spatiotemporal neural networks", IEEE Transactions on Knowledge and Data Engineering, 2021
- R. Setchi, K. Asikhia, "Exploring user experience with image schemas, sentiments, and semantics", IEEE Transactions on Affective Computing, 2017
- M. Bennasar, et al., "Feature selection using joint mutual information maximisation", Expert Systems with Applications, 2015
- S. Gill, et al., "AI for next generation computing: Emerging trends and future directions", Internet of Things, 2019

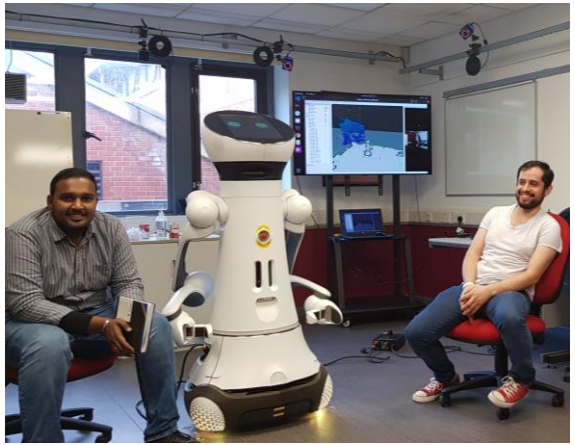
Selected projects, funded by the European Commission or national agencies

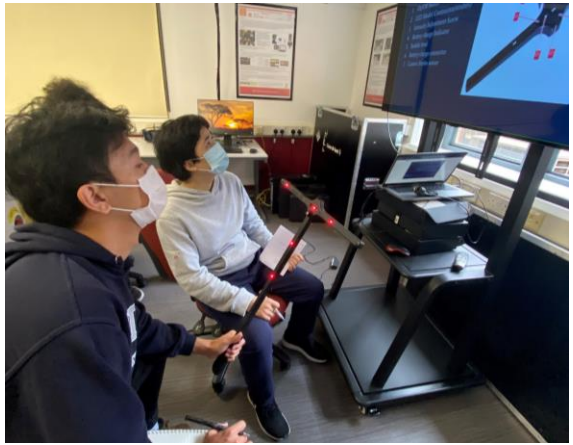
- "AI-assisted prior art search", Intellectual Property Office and Department for Business, Energy & Industrial Strategy, Regulators Pioneer Fund, 2019-2020
- "AI-powered brain microstructure imaging", UK Research and Innovation (Future Leaders Fellowship (grant no. MR/T020296/1), 2020-2024
- "Plausible reasoning using ontologies with neural graph networks", The Leverhulme Trust, 2022-2024
- "Rule of law in the age of AI: Principles of disruptive liability for multi-agent societies", Economic and Social Research Council (grant no. ES/T007079/1), 2020-2023

Related study programmes, doctoral or master levels

- PhD Knowledge Representation and Reasoning, Cardiff University
- MSc Artificial Intelligence, Cardiff University


KUKA





Research node:

Artificial Intelligence Research Centre (AIRC) at the School of Computing, Ulster University.

Directors:

Dr Jun Liu

Year of establishment:

2020

Number of researchers:

51-100

Parent organizations:

Ulster University

Contact information:

Topics of expertise

cognition and AI, automated reasoning and inference, commonsense reasoning, computer vision, ethical AI, heuristic search, intelligent robotics, knowledge representation, machine learning, multi-agent systems, natural language processing, reasoning under uncertainty, generative AI

Selected publications, peer-reviewed

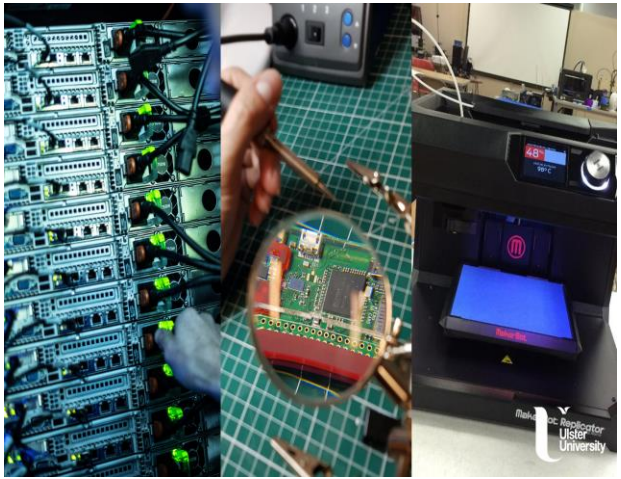
- L. H. Yang, et al., "Highly explainable cumulative belief rule-based system with effective rule-base modeling and inference scheme", Knowledge-Based Systems, 2022
- J. T. Wassan, et al., "Developing a new phylogeny-driven random forest model for functional metagenomics", IEEE Transactions on NanoBioscience, 2023
- X. Wang, et al., "A behavioural hierarchical analysis framework in a smart home: Integrating HMM and probabilistic model checking", Information Fusion, 2023
- O. Nibouche, et al., "A new sub-class linear discriminant for miniature spectrometer based food analysis", Chemometrics and Intelligent Laboratory Systems, 2024
- S.J. Blair, et al., "Aggregated topic models for increasing social media topic coherence". Applied Intelligence, 2020
- D.H. Glass, "An evaluation of probabilistic approaches to inference to the best explanation", International Journal of Approximate Reasoning, 2018
- S.L. Wu, et al., "A geometric framework for multiclass ensemble classifiers". Mach. Learn. 2023

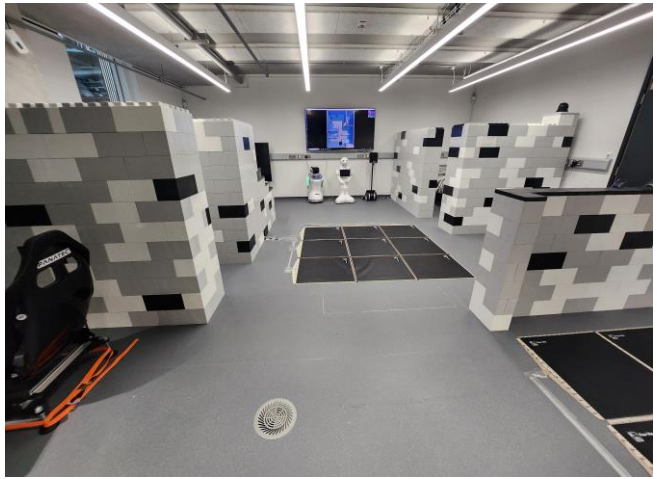
Selected projects, funded by the European Commission or national agencies

- MVSE "Multimodal Video Search by Examples", UK EPSRC (grant No.: EP/V002856/1), 2021-2024
- "Novel building Integration Designs for increased Efficiencies in Advanced climatically tunable renewable energy Systems", European Commission (grant no. 815271), 2019-2023
- The Atlantic Innovation Corridor: Social Capital and Co-Ordinating Capacity in a Multi-City, Distributed Conurbation Border Region, HEA North-South Research Programme, £1,086,911, 2022-2025
- MENHIR "Mental Health Monitoring Through Interactive Conversation", European Commission (grant No. 823907), 2019-2024
- Stop "STop Obesity Platform", European Commission (grant No. 823978), 2019-2023
- ChatPal: Conversational Interfaces Supporting Mental Health and Wellbeing of People in Sparsely Populated Areas, Interreg-NPA, £270,166, 2019-2022
- Our Generation: Building PEACE through Emotional Resilience for Today and the Future, PEACE IV, £712,798, 2020-2023

Related study programmes, doctoral or master levels

- Ph.D. in Computer Science, School of Computing, Ulster University
- M.Sc. in Artificial Intelligence/Computer Science/Internet of Things, School of Computing, Ulster University





THE EMOTIONAL AI LAB

Research node:
The Emotional AI Lab

Directors:
Prof. Andrew McStay
Prof. Vian Bakir

Year of establishment:
2016

Number of researchers:
11-20

Parent organizations:
Bangor University

Contact information:

Topics of expertise

ethical AI

Selected publications, peer-reviewed

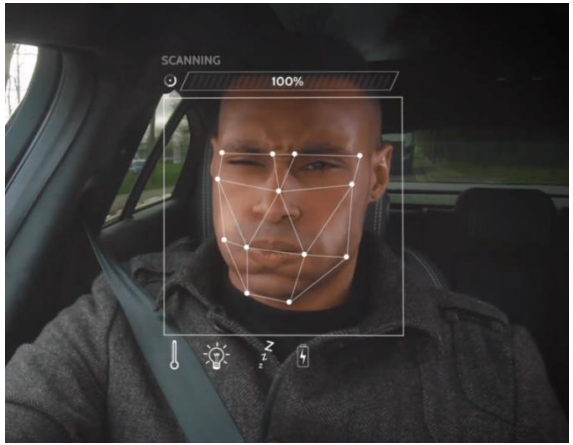
- A. McStay, L. Urquhart, "In cars (are we really safest of all?): Interior sensing and emotional opacity, International Review of Law, Computers & Technology, 2022
- A. McStay, "Emotional AI, ethics, and Japanese spice: Contributing community, wholeness, sincerity, and heart", Philos. Technol., 2021
- A. McStay, G. Rosner, "Emotional artificial intelligence in children's toys and devices: Ethics, governance and practical remedies, Big Data & Society, 2021
- M. T. Ho, et al., "Affective computing scholarship and the rise of China: a view from 25 years of bibliometric data", Nature, Humanit. Soc. Sci. Commun., vol. 8, no. 282, 2021
- A. McStay, L. Urquhart, "'This time with feeling?' Assessing EU data governance implications of out of home appraisal based Emotional AI", First Monday, 2019
- V. Bakir, A. McStay, "Fake news & the economy of emotions", Digital Journalism, vol. 6, no. 2, pp. 154-175, 2017

Selected projects, funded by the European Commission or national agencies

- "Taking Back Control of Our Personal Data: An ethical impact assessment of personal data storage apps", Innovate UK (grant no. TS/T019964/1), 2020-2021
- "Emotional AI in Cities: Cross Cultural Lessons from UK and Japan on Designing for An Ethical Life", UKRI-JST (grant no,. ES/T00696X/1), 2019-2023
- "Rights of Childhood: Affective Computing and Data Protection", EPSRC/HDI+ (grant no. EP/R045178/1), 2019-2020
- "Emotional AI: Comparative Considerations for UK and Japan across Commercial, Political and Security Sectors", ESRC-AHRC UK-Japan SSH Connections (grant no. ES/S013008/1), 2018-2019

Related study programmes, doctoral or master levels

- Politics, Ethics and Digital Governance, Bangor University (forthcoming 2023-24)
- MA Sociology, Bangor University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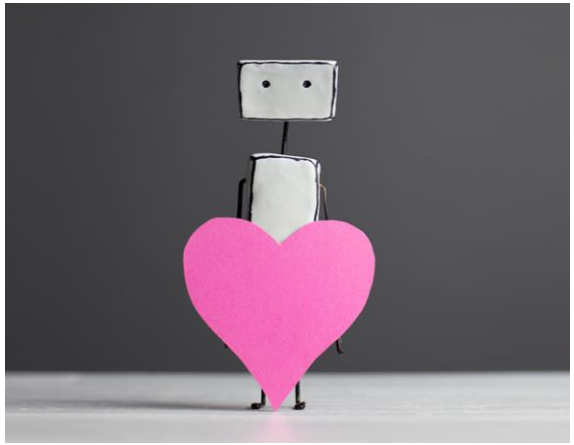
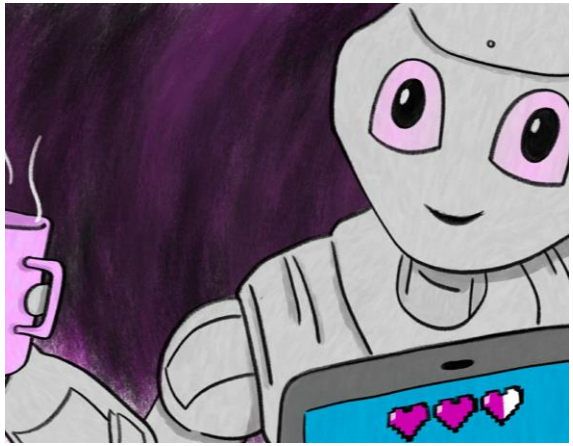



Emotional AI
and Children
Ethics, Parents, Governance
2020 Report



Research node:
Artificial Intelligence Research Centre (CitAI)

Directors:
Dr Eduardo Alonso

Year of establishment:
2019

Number of researchers:
21-50

Parent organizations:
City, University of London

Contact information:

Topics of expertise

cognition and AI, automated reasoning and inference, computer vision, ethical AI, intelligent robotics, machine learning, multi-agent systems

Selected publications, peer-reviewed

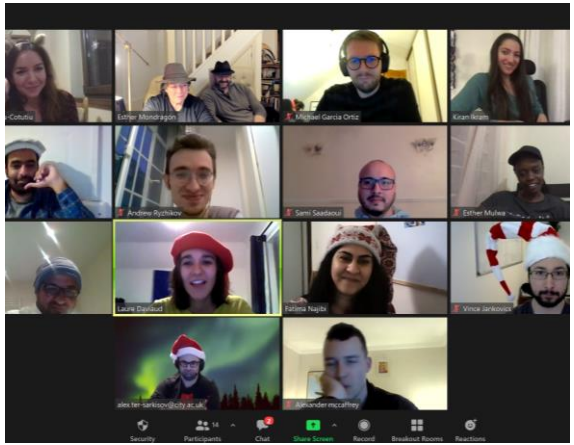
- X. Fu, et al., "Local stability and convergence analysis of neural network controllers with error integral inputs", IEEE Transactions on Neural Networks and Learning Systems, 2021
- N. Kokkola, et al., "A double error dynamic asymptote model of associative learning", Psychological Review, 2019
- A. Ter-Sarkisov, "One shot model for the prediction of COVID-19 and lesions segmentation in chest CT scans through the affinity among lesion mask features", Applied Soft Computing, vol. 116, 2022
- L. Daviaud, "Register complexity and determinisation of max-plus automata", ACM SIGLOG News, 2020
- G. Tarroni, W. Bai, O. Oktay, A. Schuh, H. Suzuki, B. Glocker, P. M. Matthews, D. Rueckert, "Large-scale quality control of cardiac imaging in population studies: Application to UK Biobank", Scientific Reports, 2020
- D. Chicharro, S. Panzeri, R. M. Haefner, "Stimulus-dependent relationships between behavioral choice and sensory neural responses", eLife, 2021

Selected projects, funded by the European Commission or national agencies

- "AI art and the blockchain", EPSRC-Alan Turing Institute (Turing Network Development Award), 2022
- "DeepSync: Automated VFX for video dubbing", Innovate UK Smart Grant, 2022-2023
- "Learning, approximating and minimising streaming automata for large-scale optimisation", EPSRC New Investigator Award, 2020-2023
- InDeal, "Innovative technology for district heating and cooling", European Commission (grant no. 696174), 2016-2019

Related study programmes, doctoral or master levels

- Doctoral Training Programme in Industrial Artificial Intelligence, City, University of London
- MSc in Artificial Intelligence, City, University of London



Research node:
Data Science & Artificial Intelligence Research group

Directors:
Professor Atta Badii

Year of establishment:
2004

Number of researchers:
1-10

Parent organizations:
University of Reading

Contact information:

Topics of expertise

constraint processing, ethical AI, human Interfaces, intelligent robotics, knowledge representation, machine learning, natural language processing

Selected publications, peer-reviewed

- A. Moin, et al., "A model-driven approach to machine learning and software modeling for the IoT. software and systems modeling", 2022
- F. Stahl, et al., "A frequent pattern conjunction Heuristic for rule generation in data streams", Information, 2021
- M. M. Idrees, et al., "A heterogeneous online learning ensemble for non-stationary environments", Knowledge-Based Systems, 2020
- A. Badii, W. Khan, "Pathological gait abnormality detection and segmentation by processing the hip joints motion data to support mobile gait rehabilitation", Research in Medical & Engineering Sciences, 2019
- M. S. Hammoodi, et al., "Real-time feature selection technique with concept drift detection using adaptive micro-clusters for data stream mining" Knowledge-Based Systems, 2018
- J. Wu, et al., "Generic, network schema agnostic sparse tensor factorization for single-pass clustering of heterogeneous information networks", PLoS ONE, 2017

Selected projects, funded by the European Commission or national agencies

- "Critical-Chains, IOT- & BLOCKCHAIN-ENABLED SECURITY FRAMEWORK FOR NEW GENERATION CRITICAL CYBER-PHYSICAL SYSTEMS IN FINANCE SECTOR", European Commission (grant no. 833326), 2019-2022
- CORBYS "Cognitive Control Framework for Robotic Systems", European Commission (FP7, grant no. 270219), 2011-2015
- "Companionable, Integrated Cognitive Assistive and Domotic Companion Robotic Systems for Ability and Security", European Commission (FP7, grant no. 21648), 2008-2012
- MOSAIC, Multi-Modal Situation Assessment & Analytics Platform, EC- FP7-Security-261776 April 2011- July2014

Related study programmes, doctoral or master levels

- PhD Studies in application of Machine Learning & Data Science, applied to medical and cyber security
- Masters Course in Advanced Computer Science (AI & Data Science)

LANGUAGE AND MULTIMODAL AI

Research node:
Language and Multimodal AI Lab (LAMA)

Directors:
Prof Lucia Specia
Dr Marek Rei

Year of establishment:
2018

Number of researchers:
11-20

Parent organizations:
Imperial College London

Contact information:



Topics of expertise

Selected publications, peer-reviewed

- H. Behnke, M. Fomicheva, L. Specia, "Bias mitigation in machine translation quality estimation", ACL, 2022
- J. Stacey, Y. Belinkov, M. Rei, "Supervising model attention with human explanations for robust natural language Inference", AAAI, 2022
- N Peinelt, M. Rei, M. Liakata, "GiBERT: Introducing linguistic knowledge into BERT through a lightweight gated injection method", EMNLP (Findings), 2021
- Z. Wang, Y. Miao, L. Specia, "Cross-modal generative augmentation for visual question answering", BMVC, 2021
- J. Ive, et al., "Exploiting multimodal reinforcement learning for simultaneous machine translation", EACL, 2021
- M. Tänzer, S. Ruder, M. Rei, "Memorisation versus generalisation in pre-trained language models", ACL, 2022

Selected projects, funded by the European Commission or national agencies

- DETOX "Detecting and Explaining Toxicity in Context", European Commission (Horizon Europe), 2022-2023
- RefGround "Referential grounding in multimodal machine translation", AFRL (European Office), 2018-2022
- MultiMT "Multimodal context modelling for Machine Translation", European Commission (H2020, ERC Starting Grant), 2016-2021
- Bergamot "Browser-based Multilingual Translation", European Commission (H2020), 2018-2021

Related study programmes, doctoral or master levels

- UKRI Centre for Doctoral Training in Safe and Trusted AI
- UKRI Centre for Doctoral Training in AI for Healthcare

British Antarctic Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Research node:
BAS Artificial Intelligence Lab

Directors:
Dr Scott Hosking (Leader)
Dr Martin Rogers (Deputy)
Dr Jonathan Smith (Deputy)

Year of establishment:
2018

Number of researchers:
21-50

Parent organizations:
British Antarctic Survey (BAS)

Natural Environment Research Council (NERC)

Contact information:

Topics of expertise

automated reasoning and inference, computer vision, constraint processing, machine learning, planning and action, reasoning under uncertainty

Selected publications, peer-reviewed

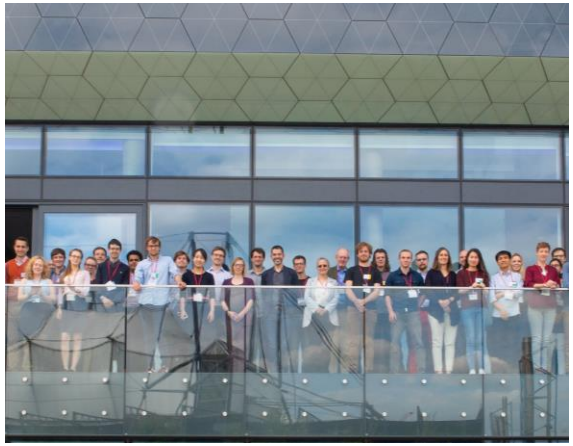
- T. R. Andersson, et al., "Seasonal Arctic sea ice forecasting with probabilistic deep learning", *Nature Communications, 2021*
- T. R. Andersson, et al., "Environmental sensor placement with convolutional Gaussian neural processes", *Environmental Data Science*, 2023
- B. Evans, et al., "Unsupervised machine learning detection of iceberg populations within sea ice from dual-polarisation SAR imagery", *Remote Sensing of Environment*, 2023
- M. S. Rogers, et al., "Sea ice detection using concurrent multispectral and synthetic aperture radar imagery", *Remote Sensing of Environment*, 2024
- J. D. Smith, et al., Autonomous Passage Planning for a Polar Vessel, *arXiv*, 2022
- R. Furner et al., A sensitivity analysis of a regression model of ocean temperature, *Environmental Data Science*, 2022

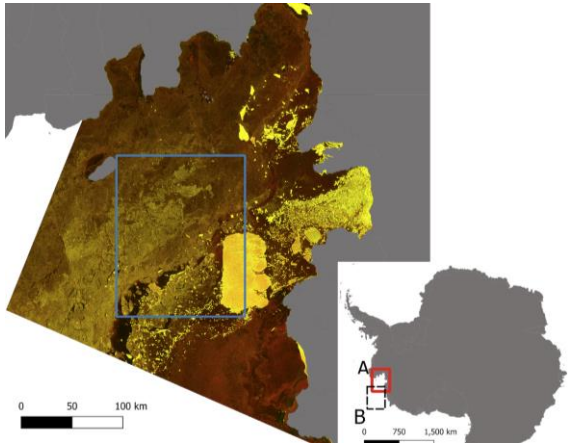
Selected projects, funded by the European Commission or national agencies

- DEFIANT "Drivers and Effects of Fluctuations in sea Ice in the ANTarctic", NERC (grant no. NE/W004747/1), 2021-2025
- IceNet " AI for predicting and understanding Arctic sea ice loss", EPSRC (grant no. EP/T001569/1), 2019-2021
- Digital Twins of the Polar Regions, NERC, EPSRC, The Alan Turing Institute, 2020-2024
- AMOP: "Autonomous Marine Operations Planning", NERC, 2021-2025

Related study programmes, doctoral or master levels

- Ph.D. in Artificial Intelligence for Environmental Risks, University of Cambridge and British Antarctic Survey

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Industry node:
Envisionit Deep AI®

Director:
Dr. Jaishree Naidoo
Chief Executive Officer and
Paediatric Radiologist

Company:
Envisionit Deep AI®

Year of establishment:
2019

Number of employees:
10-19

Office locations in Europe
Cobham, United Kingdom

Contact information:

Sectors of expertise:
Education, healthcare, software and IT services

Selected services or products (AI-powered or enabling AI):

- RADIFY®. The radiology AI suite of decision support tools. With FDA clearance, RADIFY® rapidly identifies major abnormalities in chest X-rays (for both adults and children), mammograms, and ultrasound images. This technology can pinpoint pathologies and prioritize these images within milliseconds. As a result, it enables doctors to diagnose more efficiently, consistently, and cost-effectively.
- RATify. AI assurance and post-market surveillance platform. RATify is an all-encompassing research and validation platform designed to aid in the creation of new AI tools and the assessment of our other third-party AI solutions. It advances beyond traditional research methods with its capabilities for retrospective evaluation and real-time auditing. This allows for the generation of scientific evidence and the analysis of various AI solutions, ensuring continuous quality assurance.
- CAT. CAT is our gamified, intelligent case-solving platform designed for training and enhancing the adoption of AI among medical imaging specialists. This tool aids medical professionals in analysing images with the help of an AI assistant. The CAT assistant provides real-time feedback, suggesting corrections and evaluating trainee performance to improve skills and proficiency.

Selected projects, EC or nationally-funded:

- TT Grant "Transformative Technologies", Innovate UK, 2023
- CPI Grant "Health Technology Regulatory and Innovation", Innovate UK, 2022

Topics of interest:
Cognition and AI, ethical AI, generative AI, knowledge representation, machine learning






Unit name:

ELLIS unit Cambridge

Director(s):

Prof. Carl Edward Rasmussen

Prof. José Miguel Hernández-Lobato

Coordinating organization(s):

University of Cambridge

Contact information:

Introduction:

The mission of the ELLIS unit Cambridge is to build on the excellent machine learning and AI infrastructure already available within the University of Cambridge and serve as a stepping stone towards creating a center of excellence. Many of the members of the ELLIS unit Cambridge are strong in Bayesian statistics and probabilistic machine learning. These types of methods are expected to play a key role in addressing some of the limitations of existing approaches: lack of robustness, data-efficiency, uncertainty awareness, flexible adaptation and understanding causality. Other unit members work on specific application areas: language modeling, healthcare, computer systems and molecular modeling. The significant strength in probabilistic and Bayesian machine learning makes the ELLIS unit Cambridge unique in Europe and... (more at the website)

Link to introduction video

Unit members

Coordination:

- Catarina A. Lopes

Scholars:

- Adrian Weller

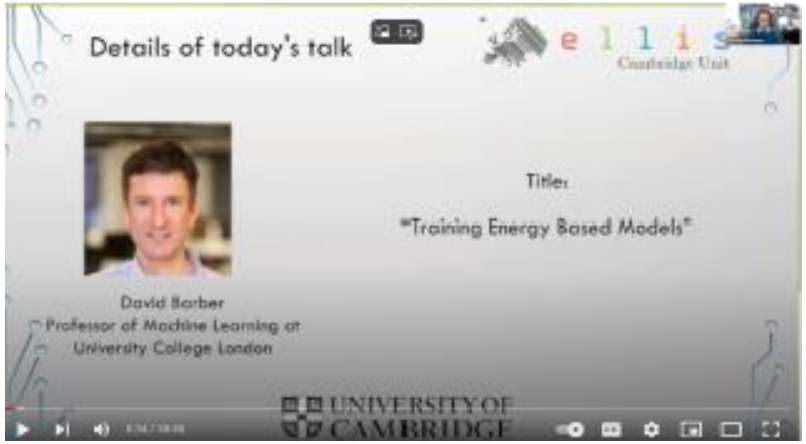
Fellows:

- Gábor Csányi
- Mark Girolami
- Neil D. Lawrence
- Anna Korhonen
- Pietro Liò
- Mihaela v. d. Schaar
- Richard E. Turner
- Zoubin Ghahramani

Members:

- Richard E. Turner
- Carl Henrik Ek
- David Krueger
- Po-Ling Loh

Affiliated organizations(s):



ELLIS Seminar Series

NeurIPS event 2023

ELLIS Summer School 2023

NeurIPS event 2023

Unit name:

ELLIS unit Edinburgh

Director(s):

Prof. Ivan Titov

Coordinating organization(s):

THE UNIVERSITY OF EDINBURGH

Contact information:

Introduction:

The ELLIS unit Edinburgh will mainly focus on machine learning (ML) and natural language processing (NLP) research. The ML group studies computational processes that find patterns and structure in data. This forms the largest academic ML group in the UK and includes former programme chairs for three top international conferences in ML (NIPS, ICLR, ICML). They develop new ML and AI methodology often based on generalising the demands of cutting-edge application areas, including astronomy, systems biology, neuroscience, econometrics and healthcare. They develop reinforcement learning algorithms for autonomous systems control and decision making in single- and multi-agent systems. In Natural Language Processing, the University of Edinburgh has the highest concentration of academic NLP and speech technology in Europe. It is the world's most productive NLP research group, outranking Stanford, CMU, and Johns Hopkins.

Link to introduction video

Unit members

Coordination:

- Jodie Cameron

Scholars:

- Alexandra Birch
- S. Narayanaswamy
- Oisin Mac Aodha
- Shay Cohen

Fellows:

- Sharon Goldwater
- Frank Keller
- Mark Steedman
- Sotirios Tsaftaris
- Mirella Lapata
- Amos Storkey
- Chris Williams
- Alex Lascarides
- Iain Murray
- Stephen Renals
- Sethu Vijayakumar

Members:

- Stefano V. Albrecht
- Steven McDonagh
- Bonnie Webber
- Henry Gouk
- Pasquale Minervini
- Edoardo Maria Ponti
- Antonio Vergari
- Hakan Bilen
- Elliot J. Crowley
- Craig Innes
- Charles Sutton

Affiliated organizations(s):

Unit name:

ELLIS unit London

Director(s):

Prof. Arthur Gretton

Coordinating organization(s):

UCL centre for artificial intelligence in the Computer Science Department

Contact information:

Introduction:

The proposed unit will integrate research in artificial intelligence in UCL, which takes place across multiple departments. The UCL centre for artificial intelligence in the Computer Science Department is one of the world's leading AI research organizations. It comprises the Machine Reading Group, whose goal is to build machines that can read and "understand" unstructured textual information; the Computer Vision Group, which aims to extract useful information from images and movies; and the Computational Statistics and Machine Learning Group, which aims to make methodological progress in foundational AI using techniques from statistics, mathematics and computer science. The core aim of the AI Centre is to create new AI technologies and advise on the use of AI in science, industry and society, as AI becomes...(more ate the website)

Link to introduction video

Unit members

Coordination:

Scholars:

- Matt J. Kusner
- Pontus Stenetorp
- Jeremias Knoblauch
- Víctor Ponce López

Fellows:

- Lourdes Agapito
- Sebastian Riedel
- John Shawe-Taylor
- David Barber
- Emine Yilmaz
- Marc Deisenroth
- Maneesh Sahani

Members:

- François-Xavier Briol
- Carlo Ciliberto
- Benjamin Guedj
- Laura Toni
- Gabriel J. Brostow
- Emiliano De Cristofaro
- Dimitrios Kanoulas
- Ioanna Manolopoulou
- Miguel R. D. Rodrigues
- Ricardo Silva
- Alexandros Beskos
- Lorenzo Cavallaro

Affiliated organizations(s):

- Gatsby Computational Neuroscience Unit
- Alan Turing Institute

Unit name:
ELLIS unit Manchester

Director(s):
Prof. Magnus Rattray

Coordinating organization(s):
University of Manchester

Contact information:

Introduction:
The ELLIS Unit Manchester offers (i) a link to a large, strong community across a broad range of data science and AI, which aims to considerably strengthen its machine learning action through the ELLIS Unit and new recruitments to it, (ii) outstanding translational opportunities in health; it is affiliated with the Pankhurst Institute having its main mission in translation, and (iii) a regional hub. Through the unit, it is intended to significantly contribute to a concerted European effort in basic research in machine learning.

Link to introduction video https://youtu.be/xXRxPNQxiJo?si=0ufIrEBc-ATIfp0r

Unit members

Coordination:
- Matthew Harrison

Fellows:
- Samuel Kaski

Scholars:
- Tingting Mu
- Theodore Papamarkou
- Mingfei Sun

Members:
- Mauricio A. Álvarez López
- Alejandro Frangi
- Anirbit Mukherjee
- Niels Peek
- Sophia Ananiadou
- Julia Handl
- Claudia Lindner
- Wei Pan
- Matthew Sperrin
- Gavin Brown
- Jonas Latz

Affiliated organizations(s):
- The Alan Turing Institute
- Manchester Turing Innovation Catalyst
- Finnish Center for Artificial Intelligence (FCAI)
- Aalto University
- ELLIS Helsinki
- The University of Cambridge


PANKHURST
INSTITUTE
NHS
bruntwood

Unit name:
ELLIS unit Oxford

Director(s):
Prof. Stephen Roberts

Prof. Yee Whye Teh

Prof. Michael Wooldridge

Coordinating organization(s):
University of Oxford

Contact information:

Introduction:
The ELLIS Unit Oxford will serve as a focal point, bringing together the disparate departments and institutes under one roof. While initially ELLIS@Oxford will be a virtual unit with bases across the 3 core departments, our intention is for it to crystallise into a research institute conducting world leading AI/ML research, educating the next generation of scientists and technologists, incubating startups and high impact applications, and guiding thinking on the societal impacts on new AI/ML technologies. Establishing an ELLIS Unit is a crucial first step towards this goal. It allows a single point of contact with industries and government bodies to raise funds and investments. It creates a critical mass for the development of university structures enabling impact, including incubators and teaching and admin buyouts. And it enables...(more at the website)

Link to introduction video

Unit members

Coordination:

Scholars:
- Yarin Gal
- Varun Kanade
- Duncan Watson-Parris

Fellows:
- Phil Blunsom
- Chris Holmes
- Paul Newman
- Philip H. S. Torr
- Shimon Whiteson
- Michael Bronstein
- Alison Noble
- Ingmar Posner
- Andrea Vedaldi
- Andrew Zisserman
- Timothy Behrens
- Edith Elkind
- Marta Kwiatkowska
- Michael A. Osborne

Members:
- Alessandro Abate
- Puneet K. Dokania
- Robin J. Evans
- Janet Pierrehumbert
- Christian Rupprecht
- Atılım Güneş Baydin
- Arnaud Doucet
- Philip Stier
- David A. Clifton
- Nick Hawes
- Patrick Rebeschini
- Jared Tanner

Affiliated organizations(s):

elise

European Network of AI Excellence Centres

Interested in ELISE AI progress?

https://www.elise-ai.eu/

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 951847. ELISE works in close collaboration with the ELLIS Society (European Laboratory for Learning and Intelligent Systems).

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