DATA SCIENCE AND ARTIFICIAL INTELLIGENCE
MSc specialization

Theoretical and practical AI knowledge adapted to industry needs

Strong industrial links ✅

Strong research background ✅

International training ✅

Machine Learning

Machine Learning Case Studies
Deep Learning

Advanced Data Analytics
Intelligent Data Analysis and Decision Support

Trustworthy AI and data analysis
Data security and privacy in machine learning
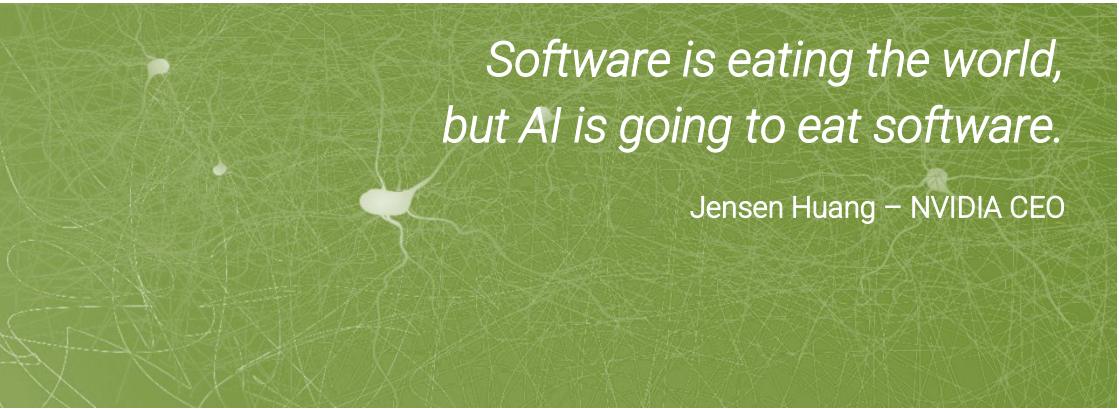
AI ethics

AI and law

The explosive growth in the amount of data, the variety of knowledge elements, the computational power and the repertoire of artificial intelligence (AI) is both a new opportunity and a new responsibility for humanity. The development of smart devices, autonomous systems, human-machine ensembles and multiagent systems requires both data analytics capabilities and the application of AI. To achieve this, the main specialisation offers the following courses:
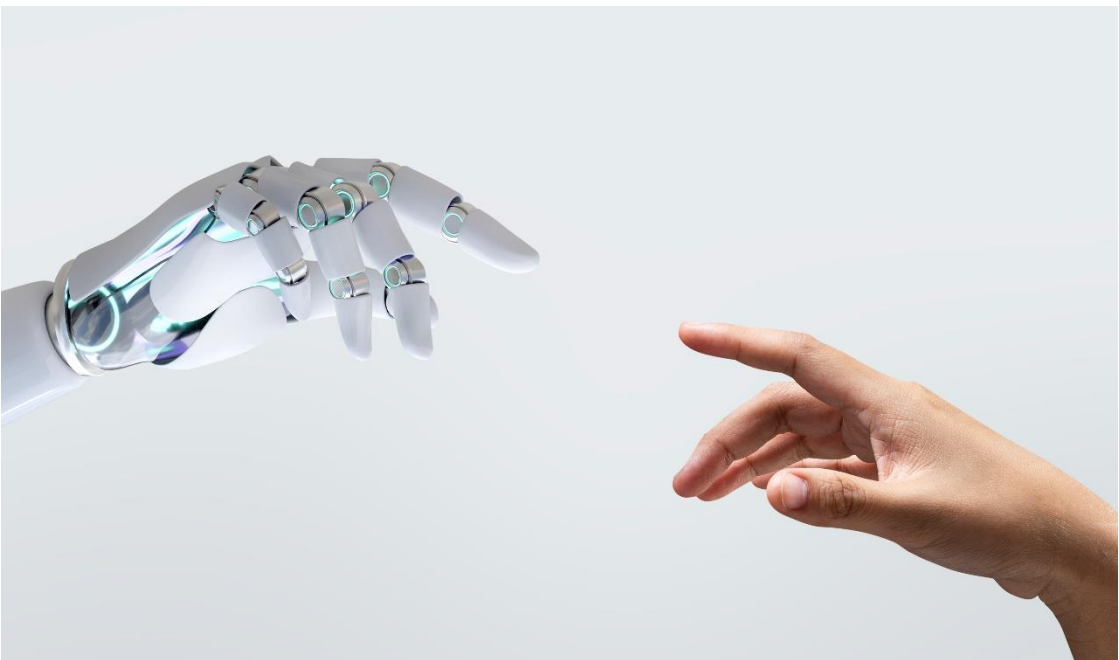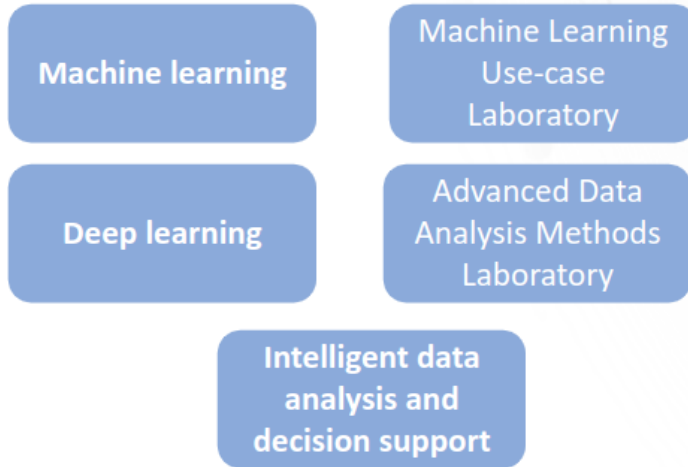
Data science is a focus of the major, which has helped to shape the data-driven research paradigm and has a wide range of industrial applications. Students will learn how to create machine learning algorithms and applications in the data analytics workflow.

In many cases, the neural networks underlying deep learning can learn the features that describe the data and model the data in one step.

There will also be a strong focus on intelligent data analysis and knowledge engineering, active data collection, reinforcement learning, causal inference, and ensuring that models and decisions are interpretable and explainable.

Software is eating the world, but AI is going to eat software.

Jensen Huang – NVIDIA CEO

The social aspects of data science and AI, including the General Data Protection Regulation and the EU AI Act's regulations, are covered through recommended electives. Completion of these subjects will also enable the award of the international MSc certificate in Human-centred AI Masters as part of the Computer Engineering degree.

The main specialisation builds on the BSc in Computer Engineering and the BSc in Computer Science, or equivalent computer science subject.

PROJECTS AND TOPICS

Our students have the opportunity to participate in basic and applied artificial intelligence research projects with national and international partners. The topics can be pursued in the framework of a TDK, diploma or even PhD studies in the following areas.

- Bayesian calculations, data and knowledge fusion methods

- Causality research
- Health, chemo- and bioinformatics: drug discovery, statistical genetics
- Distributed artificial intelligence: multi-agent systems, federated learning
- Trustworthy and explainable AI
- Smart home, smart wearable electronics integration6
- Research and development of driver assistant technologies
- Deep learning-based machine vision, medical image processing, sports analytics
- Natural language processing (NLP) in public administration and finance
- Speech technologies, speech synthesis and speech recognition
- Graph neural networks, 3D grid mesh modelling, knowledge graphs
- Self-supervised technologies
- Analysis of privacy and security problems
- AI-based management of cloud and 5G systems
- ... and much more!

PARTNEREINK