# prg.ai Master

**Institution:** Faculty of Electrical Engineering, Czech Technical University (FEE CTU)
**Language of study:** English
**Duration:** 3 semesters
**ECTS:** 90 credits
**Program fees:** Applicable (cca EUR 2600/semester)
**Start:** September 2025

## Program Highlights

- **Interdisciplinary Focus.** The prg.ai Master program is crafted to embrace the interdisciplinary nature of AI, including machine learning, data engineering, natural language processing, and ethical aspects of AI.
- **Expert Faculty.** Managed by experienced researchers and lecturers from FEE CTU, Czech Institute of Informatics, Robotics, and Cybernetics, Charles University Faculty of Social Sciences and Institute of Formal and Applied Linguistics.
- **Research Opportunities.** Students will have the opportunity to engage in cutting-edge research projects, benefiting from the strong AI research ecosystem in Prague.
- **Network Building.** Participation in the program offers access to a vast network of AI professionals, researchers, and fellow students, fostering collaboration and innovation with the support by the initiative prg.ai.
- **Industry-Relevant Curriculum.** The curriculum is designed in consultation with our Industrial Advisory Boar: Leoš Dvořák (Valeo), Martin Rehák (Resistant AI), Petr Somol (Gen), Milan Šulc (Second Foundation).

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## Profile of the Graduate

Graduates will be prepared for various roles in the hi-tech industry, academia, or research institutions. They can pursue careers as AI researchers, machine learning engineers, data scientists, NLP specialists, computer vision experts, or cybersecurity analysts. The comprehensive skill set ensures that graduates are well-equipped to contribute to the field of AI, both in practical applications and in advancing the research frontiers.

- **Proficiency in machine learning.** Graduates will have a deep understanding of ML. They will be skilled in designing, implementing, and evaluating various ML algorithms and models, including supervised, unsupervised, and reinforcement learning.
- **Expertise in computer vision.** They will possess expertise in computer vision technologies, enabling them to develop systems that can process, analyze, and interpret visual data. This includes skills in image recognition, object detection, pattern recognition, and image generation.
- **Skills in deep learning.** Graduates will be proficient in deep learning methods. They will understand the architecture and applications of neural networks, including convolutional neural networks and recurrent neural networks.
- **Knowledge of natural language processing.** They will have a strong grasp of NLP techniques, enabling them to develop AI systems capable of understanding, interpreting, and generating human language.
- **AI for cybersecurity.** Graduates will be equipped with the knowledge to apply AI techniques in cybersecurity. They will understand how to develop AI-based solutions for threat detection, network security, and data protection.
- **Ethical and social awareness.** Understanding the ethical implications of AI and its impact on society will be a crucial aspect of education.
- **Advanced programming proficiency.** Graduates will be proficient in programming languages and frameworks commonly used in AI, such as Python, and tools like TensorFlow and PyTorch. They will also have essential knowledge of DevOps.

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## Courses and teachers

| Semester | Course | | | | |
|---|---|---|---|---|---|
| 1 | **Deep Learning**<br>K. Zimmermann | **ML Engineering**<br>T. Báča | **AI for Cybersecurity**<br>T. Pevný | **AI and Society**<br>V. Střítecký | Bridging the Gap |
| 2 | **ML Fundamentals**<br>V. Franc | **ML Methods**<br>F. Železný | **Computer Vision Methods**<br>J. Matas | **NLP and Translation**<br>O. Bojar | **Selected Topics in AI**<br>T. Kroupa |
| 3 | Diploma Thesis | | | | |

## Prerequisites

A *bachelor's degree* in computer science, mathematics, or a related field is required. Candidates are expected to have a working knowledge of:

- **linear algebra**
- **calculus and optimization**
- **probability and statistics**

Candidates should be proficient in at least one programming language commonly used in AI, such as Python. Experience with AI-related libraries and frameworks (like PyTorch) is also beneficial.

## Contact

For further information please contact:

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