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Ministry of Foreign Affairs of the Czech Republic

Czechia an attractive partner in AI research

Czech Universities at the Top of Research Rankings

Czechia excels in AI-related research. According to CS Rankings 2014-2024, the Czech Technical University in Prague ranks 5th in Europe for computer vision and 8th for robotics. Masaryk University in Brno is ranked 7th in logic and verification. Brno University of Technology was selected by AI 2000 as one of the world's top five institutions for speech recognition. Charles University in Prague coordinates the European High Performance Language Technologies project and will lead a much larger Digital Europe LLM-focused project in 2025. Czech AI researchers published the world's first open-source project for training neural language models (RNNLM) and have won several global AI competitions, such as the World Championship for Automated Theorem Proving and the Alexa Prize Social Bot Grand Challenge competition. Czech AI research teams, which are often highly international, collaborate with leading research institutions worldwide, including MIT, Stanford University, Cambridge University, and ETH Zurich. In July 2024, Czechia introduced a new AI strategy highlighting its commitment to becoming a leader in AI technology and to fully exploiting AI's transformative potential by focusing on both research and practical applications.

Key AI Research Sub-areas for cooperation

machine learning	**AI in healthcare**
machine reasoning	**AI in biotechnology/drug research**
computer vision, image processing	**AI in Industry 4.0 (smart manufacturing)**
language and speech processing	**AI in defense and security (including cybersecurity)**
intelligent robotics	**AI regulation**
generative technologies	**AI in energy/environmental modeling**
optimization and planning	**AI in smart mobility**
game theory	**AI in chip design**

Czechia as an Interconnected International AI Hub

Czechia's AI ecosystem is well connected to both the EU and international AI ecosystems. Czech research institutions are part of EU AI networks, namely CAIRNE - Confederation of Laboratories for Artificial Intelligence Research in Europe and ELLIS - European Laboratory for Learning and Intelligent Systems and have been participating in five out of seven EU Centers of Excellence in AI. The Czech AI laboratories maintain excellent relations with the most important players in the US, Asia, and the Middle East.

Powerful Supercomputing Infrastructure

AI requires substantial computing power. The Czech AI research community benefits from the fact that Czechia hosts a powerful supercomputing infrastructure. The National Supercomputing Center IT4INNOVATIONS operates a powerful supercomputer and has been selected to host the LUMI-Q consortium's quantum computer. In addition, through its participation in the European LUMI consortium, the Czech national supercomputing center has access to the fastest supercomputer in Europe located at CSC's data center in Kajaani, Finland.

Czechia's Leading Institutions in AI research

A number of universities in Czechia are engaged in AI research: Czech Technical University (Prague), Charles University (Prague), Brno University of Technology, Masaryk University (Brno), University of West Bohemia (Pilsen), Technical University of Liberec, VSB - Technical University Ostrava and others. Moreover, the Czech AI ecosystem includes research institutes of the Czech Academy of Sciences. Czech universities graduate approximately 500 MSc/Ph.D. students in AI and related fields every year.

- **Czech Technical University (Prague)** - covers a wide range of AI research fields, one of the European leaders in machine reasoning, computer vision, and robotics. The leading research teams mainly work at the Czech Institute of Informatics, Robotics and Cybernetics (CIIRC) and the Faculty of Electrical Engineering (including its AI Center).
- **Brno University of Technology** - covers a wide range of AI research fields, one of the world's leaders in language and speech processing, leading research teams in traffic applications of computer vision, medical AI, and computer network analysis.
- **Charles University (Prague)** - one of the European leaders in language processing and its applications, including building and fine-tuning LLMs, conversational systems, machine translation, medical informatics, and digital humanities, as well as in classical AI.
- **Masaryk University (Brno)** - one of the European leaders in logic and verification, leading research teams in bioinformatics, medical imaging, and AI regulation.
- **VSB - Technical University of Ostrava** - hosts the national supercomputing center.
- **University of West Bohemia (Pilsen)** - covers a wide range of AI research fields including computer vision and language and speech processing.
- **Technical University of Liberec** - focuses on speech and language processing technologies and machine learning methods for finding hidden factors in data for signal separation and extraction.

Dynamic Interdisciplinary Research Cooperation

Dynamic interdisciplinary cooperation is underway across various fields of AI applications including healthcare, biotechnology, and drug research. Technical universities provide expertise in AI research, while medical universities and teaching hospitals offer medical knowledge, address clinical needs, and provide access to health systems. Czech AI researchers participate, for example, in projects such as TEF-Health, CLARA, and RES-Q+. Similar cooperation exists in the fields of biotechnology and drug research, areas in which Czech research has earned a world-class reputation.

Intense Cooperation with Industry

There is intense collaboration between universities and industry covering a wide range of topics, from cybersecurity to Industry 4.0. Czech universities host six European Digital Innovation Hubs and three industrial testbeds, as part of the RICAIP Teaming project and are widely used by the Testing and Experimentation Facilities of Artificial Intelligence (Manufacturing), known as the AI-MATTERS project. In addition, the Czech AI research ecosystem includes a dynamically growing number of innovative startups, whose AI-based solutions accelerate digital transformation across the country. Equally dynamic is the cooperation between universities and global companies, some of which have established their AI R&D centers in Czechia.

AI Platforms and Associations

- Czech National AI Platform - connects the Czech academic, public, private and non-profit sectors
- Czech Association of Artificial Intelligence – an association of Czech AI companies
- AI Czechia – an informal network of Czech AI researchers from academia
- Prg.ai - a regional AI association in Prague
- Brno.AI – a regional AI association in Brno
- National Center of Industry 4.0 - connects industry and academia
- Czech Society for Artificial Intelligence and Innovative Digital Technologies in Medicine

Czech Science Diplomacy

For more information related to international collaboration in research and higher education, you may contact the Unit of Science Diplomacy at the Ministry of Foreign Affairs of the Czech Republic at science@mzv.gov.cz.