

MARTIN KRUTSKÝ

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Aiming for responsible research and development of AI through neurosymbolic and XAI techniques.

RESEARCH INTERESTS

- **NeSy Mechanistic Interp.:** Neurosymbolic AI for a more rigorous mechanistic interpretability.
- **Responsible AI:** Assessment of explainability/interpretability techniques for AI governance.
- **Geometric Deep Learning:** Symmetry-aware graph neural networks for greater data efficiency.

RESEARCH EXPERIENCE

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|---|--|------------|
|  | Intelligence Data Analysis Lab, CTU • AI Researcher
<i>Researching deep learning explainability, neurosymbolic AI, and GNNs.</i> | since 2024 |
|  | Center for Machine Perception, CTU • Student Researcher
<i>Researched recognition of nationality and first impressions using CNNs.</i> | 2018–2019 |

INDUSTRY EXPERIENCE

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|---|--|------------|
|  | Leeaf/McEDISON • ML Researcher & AI Engineer
<i>Developing ML models for improving IVF treatment, developing LLM-based apps.</i> | since 2023 |
|  | Microsoft • Software Engineering Intern
<i>Modeled monitoring metrics of MS Teams' middleware server load.</i> | 2022 |
|  | Blindspot Solutions • Machine Learning Developer
<i>Developed entity recognizers, classifiers, chatbots, and dynamic pricing models.</i> | 2020–2022 |
|  | Barclays • Part-Time Developer
<i>Developed an ML server activity prediction and monitoring system.</i> | 2019–2020 |

EDUCATION

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| – Czech Technical University • Ph.D. in Artificial Intelligence
Research topic: <i>Explainable Neurosymbolic AI</i> • Advisor: Gustav Šír ✉ | since 2024 |
| – Czech Technical University • M.Sc. in Artificial Intelligence
Master Thesis: <i>Interpretable Symmetry-Aware Deep Learning for Planning</i>
<i>Graduated with honors; Grade: 1.26 ECTS ≈ 3.74 GPA</i> | 2021–2024 |
| – Aalto University • Erasmus+ exchange studies | 2023 |
| – prg.ai Minor • Selective interdisciplinary curriculum | 2018–2021 |
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PEER-REVIEWED PUBLICATIONS

2. **Binarizing PI-GNNs for Combinatorial Optimization** (Krutský, Šír, Kungurtsev, Korpas) 2025
accepted at European Conference on Artificial Intelligence (ECAI)
1. **Geometric Deep Learning for the Rubik's Cube Group** (Krutský, Šír) 2025
IEEE Transactions on Neural Networks and Learning Systems

PRESENTATIONS AND TALKS

- Assessing XAI Methods for AI Safety Governance (Krutský, Němeček, Gürtler, Peleška) 2025
Oral presentation at the International Conference on Large-Scale AI Risks
- Dimensions of Explainability in AI Alignment (Krutský, Němeček, Peleška, Gürtler) 2025
Poster presentation at the 29th International Student Scientific Conference (POSTER)
- Ethics in AI Development (Němeček, Krutský) 2024
Public talk for the AI 4 All event at AI Days 2024
- Responsible AI in Prague (Krutský) 2023
Public talk at the AI Days 2023

SERVICE

- Czech Alpha Chapter of Upsilon Pi Epsilon • **President** since 2024
Event organization and communication on behalf of the chapter
- Responsible AI at Czech Technical University • **Founding Member** since 2023
Event organization, research contribution and coordination

SCHOLARSHIPS

- Upsilon Pi Epsilon • **UPE Academic Achievement Award** 2022
- Czech Technical University • **Scholarship for Talented Students** 2018

SKILLS

Machine Learning: PyTorch | PyTorch Geometric | Transformers | Scikit-Learn | XGBoost

Data Science: Pandas | NumPy | Seaborn | Matplotlib | basics of Hadoop, Spark

Generative AI: LLM APIs | RAG | guardrails | agents/tools | LangChain | OSS models

DevOps: Docker | Digital Ocean | Amazon Web Services | Git + CI/CD | JIRA

Web Stack: FastAPI + Pydantic | Flask | basics of Next.js, Django

Programming: Python | Java | SQL | basics of JavaScript, C++, Kotlin

SUMMER SCHOOLS

Eastern European ML Summer School 2025

Human-aligned AI Summer School 2024

AI & Ethics Summer School 2022

LANGUAGES

English ● ● ● ● ● Proficient

German ● ● ● ○ ○ Intermediate

Czech ● ● ● ● ● Native