Alexander Kovrigin

Bremen, Germany

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Education

Constructor University	Sept. 2024 - Expected June 2026
M.Sc. Data Science	*Bremen, Germany*
Constructor University	Sept. 2022 - Aug. 2024
B.Sc. Computer Science, Minor in Mathematics	*Bremen, Germany*

Transferred from:

Higher School of Economics	Sept. 2021 - Aug. 2022
Bachelor of Applied Mathematics and Computer Science	*St. Petersburg, Russia*

Experience

JetBrains — Nov. 2023 – Present
Junior ML Researcher — *Bremen, Germany*

Research · RLVR · AI Agents · Paper Writing

Improving LLMs for software engineering tasks using reinforcement learning in the AI Agents & Planning team.

- First author of PIPer, post-trained Qwen3-8B using SFT + **RLVR for automated environment setup** that reaches the performance of GPT-4o and Qwen3-32B on this task. Presented at the NeurIPS 2025 Fourth Workshop on Deep Learning for Code.
- Working on an internal RL framework (based on VeRL) and infrastructure for **AI Agents** training.
- Coauthored JetBrains Research papers totaling **over 50 citations since 2024**, including Long Code Arena and EnvBench. I presented the latter at the ICLR 2025 Third Workshop on Deep Learning for Code.
- Currently training routing models for cost-efficient LLM usage in agentic SWE tasks.

Constructor University — Sept. 2023 - May 2024
Teaching Assistant — *Bremen, Germany*

Mathematics · Teaching · Presentation

- Teaching assistant for **Analysis** and **Linear Algebra** courses during 2023/2024 academic year.
- Led weekly seminars, solving problems with students and explaining key ideas.

Huawei Munich Research Center — June 2023 - Aug. 2023
Software Engineering Intern — *Darmstadt, Germany*

C++ · PyTorch

Worked on an internal **privacy-preserving machine learning framework** for the company. Used PyTorch C++ backend to use GPU acceleration for model execution (CNNs and decision trees).

Projects

Latent Diffusion for Text Generation — Nov. 2025 - Expected 2026

Diffusion Models · Deep Learning

- Researching text diffusion models for text generation in collaboration with Prof. Dr. Vetrov's group at Constructor University.
- Combining latent diffusion (for high-level semantics) with discrete diffusion (for token-level details).
- Extending prior work of Meshchaninov et al. (2025).

Learning to Discover Conservation Principles — Jan. 2023 - May 2023

Deep Learning · Research

- Collaborated on a research project focused on finding conservation laws, supervised by Prof. Andrey Ustyuzhanin
- Applied deep learning methods to extract conservation principles from experimental data, aiming to improve system integration robustness
- Got our research **published in Q1 journal**: doi.org/10.1088/2632-2153/ad4a20 (second author).

Achievements

ICPC Northwestern Europe Regional Contest (NWERC) — *Silver Medal*, 150 teams — Nov. 2023
Delft, Netherlands

Competitive Programming · C++ · Teamwork

International Mathematics Competition — *First Prize*, top 10%, 390 contestants — Aug. 2023
Blagoevgrad, Bulgaria

Mathematics · Problem-solving

Miscellaneous

Technologies: PyTorch, Transformers, VeRL, Hydra, vLLM
Online Courses: Yandex School of Data Science — Master's-level two-year online program in Data Science
Teaching: Lecturer at ACTS — Competitive programming camp for European high school students
Languages: English (C1), German (C1), French (A2), Russian (Native)