Dario Vajda

Student and Machine Learning Researcher

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EDUCATION

Faculty of Computer and Information Science, Ljubljana - *Bachelor's*

OCT 2023 – JULY 2026 (ongoing)

Bachelor of Engineering in Computer Science and Mathematics.

GPA: 9.68 – Cohort ranking: **1st**

Upcoming Master's - received conditional offers from *Mphil in Advanced Computer Science* and *Mphil in Machine Learning and Machine Intelligence* programs at **Cambridge University** (starting in October 2026)

WORK EXPERIENCE

Machine Learning Researcher - *Faculty of Computer and Information Science, Ljubljana*
FEB 2025 - PRESENT

- I have worked in a team developing reliable and open source large language models for Slovene with my focus being on translation models and I have published a paper on this topic.
- I currently work on a research project where I aim to modify the standard LLM architecture in a way that the models work on graph and text modalities natively.

PUBLICATIONS, POSTERS & SEMINAR TALKS

Improving LLMs for Machine Translation Using Synthetic Preference Data (ECAI 2025)

Used our innovative fine-tuning technique to develop an English to Slovene translator achieving state-of-the-art performance for open sourced models. Held an individual presentation at the LUHME workshop at ECAI 2025 (luhme.up.pt). Archival publication: https://aclanthology.org/2025.luhme-1.7/

Building a Strong Instruction Language Model for a Less-Resourced Language (preprint)

Paper outlining the engineering and research challenges that go into training a Large Language Model for a less-resourced language. Preprint: https://arxiv.org/abs/2603.01691

Invited 90-minute seminar talk (upcoming, April 30th 2026) — Machine Learning and Modeling Seminar, Charles University, Prague (Seminar schedule)

Scaling LLM Alignment Beyond Supervised Fine-Tuning: Solving the Data Reliance Bottleneck

Comparing Diffusion Models (DDPM) with Autoregressive Models (EEML 2025 poster)

Trained both models on the task of generating emojis and compared their performance and their strengths and weaknesses. The project was presented as a poster at EEML 2025 (eeml.eu).

PROJECTS

Mini GPT, ViT and VLM - implementation in PyTorch (Personal project)

Collection of three projects demonstrating a deep understanding of PyTorch, the transformer architecture and its application in Language models, Vision Transformers and Multimodal Models. The GPT model was trained on the Tiny Shakespeare dataset, while the 20M parameter ViT model was trained on Tiny ImageNet and achieved 45% accuracy. Finally, a 365M parameter VLM was trained on a 10B token text and image dataset.

GNNs for Traffic Jam Prediction (Stanford CS224W course project) – Medium blog post

The CS224W course is carried out by my faculty in collaboration with Stanfrod. In this group project, we trained a Graph Attention Network to predict which roads are likely to cause traffic jams.

Eutopia Pacman Contest - Winning Agent (competition)

Created an agent for a Pacman Capture the Flag competition. My winning strategy was based on good heuristic game state evaluations and good risk management, while maximising the rewards and taking advantage of all opportunities.

COMPETITIONS & AWARDS

Highest GPA in cohort, Faculty of Computer and Information Science, University of Ljubljana

1st place at Eutopia Pacman Contest competition in artificial intelligence

1st place in Serbian national mathematics and physics competitions for high schools

Participated in the **Serbian Mathematical Olympiad** (SMO)

Participated in the **Romanian Master of Physics** with the Serbian national physics team

SUMMER SCHOOLS & ACADEMIC ACTIVITIES

European Conference on Artificial Intelligence (ECAI) – Bologna, 2025 (attendee)

Eastern European Machine Learning (EEML) Summer School – Sarajevo, 2025 (attendee)

Cohere Labs ML Summer School, 2025

Eastern European Machine Learning (EEML) Summer School – Novi Sad, 2024 (voluteer)

TECHNICAL SKILLS

- **Programming**: Python for ML (PyTorch, Transformers, NeMo), OCaml, C, C++, Java, JavaScript
- **Tools & frameworks**: Git, SLURM-based HPC systems
- **Mathematics**: probability and statistics, calculus, linear algebra, optimization, numerical methods

LANGUAGES

Serbian – native

Hungarian – bilingual

English – proficient (C2 – IELTS Academic: 8.5 overall)

Slovene – advanced (C1)