Tomáš Majerčík

Student @ Faculty of Informatics and Information Technologies, STU;

NLP Research Intern at KInIT

Contact

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Portfolio: https://tomasmajercik.github.io

GitHub: https://github.com/tomasmajercik

Education

2023 - present

Bachelor's degree at Faculty of Informatics and Information Technologies; Slovak University of Technology

Language

Slovak	Native
English:	Advanced C1 CERF
German:	Begginer

Top skills

Programming Languages

Python · Pytorch · Transformers · React JS / native · PostgreSQL · C

Programming Tools

Git · Figma · Latex · Linux (Command prompt) · Arduino

Soft skills

Mentorship · Adaptability · Communication · Time Management · Responsibility · Creativity Skills

About Me

Currently, I am pursuing a Bachelor's in Computer Science at the Slovak University of Technology, FIIT. I am passionate about coding, problem-solving, and building creative projects with technology, from software development to AI and machine learning. I am particularly interested in large language models and computer vision, exploring both how models work and what can be achieved with them. Alongside AI work, I also have experience designing and building software applications

Work Experience

NLP Research Intern @ KInIT

Intern Researcher in Bratislava, Slovakia

- Jun 2025 - present
- AI, machine learning
- Mechanistic interpretability
- Research oriented
- Memory-efficient finetuning
- Evaluation

Youth Programming Tutor @ Programko

Lecturer in Bratislava, Slovakia

- October 2024 - January 2025
- Lecturing scratch on a primary school

Projects

Language specific neurons

Python · PyTorch · HF

- Identified language-specific neurons in multilingual transformer models using entropy-based analysis
- Implemented a pipeline with Hugging Face models to record neuron activations and compute LAPE entropy across multiple languages
- Built and saved language-specific neuron masks to enable targeted analysis and intervention
- Prepared ground for leveraging these neurons to improve fine-tuning on low-resource languages through selective capacity reallocation

+ LoRA, Quantization, PyTorch hooks, Entropy analysis (LAPE)
+ SSH (remote GPU), Code optimization, Visualization
+ Paper replication, Presentation / reporting

Image segmentation

Python · PyTorch

- Pixel segmentation of images from CityScapes dataset
- Designing and training U-Net model
- Logging metrics via Weights & Biases
- Comparing and evaluating multiple approaches

+ Model from scratch
+ Weights & Biases
+ Team work

Code completion evaluation

Python · Hugging Face

- Prepared a dataset for fill-in-the-middle code completion using AI models (StarCoder2, Hugging Face)
- Evaluated outputs with NLP metrics (Exact Match, chrF++, Levenshtein)
- Manually analyzed model behavior and code prediction quality

Turnify mobile app

React Native · NodeJS · PostgreSQL

- Developed a cross-platform mobile app for organizing tournaments
- Complete mobile app development

+ Frontend / REST API with Node.js (Express.js) / Database skills
+ UI, design, collaboration

All projects are accessible in the portfolio of GitHub page