

Tomáš Majerčík

Student at Faculty of Informatics and Information Technologies, STU

Trainee AI/ML Engineer at Softec



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Portfolio: <https://tomasmajercik.github.io>

GitHub: <https://github.com/tomasmajercik>

Education

2023 - June 2026

Student at Faculty of Informatics and Information Technologies, Slovak University of Technology

2019 - 2023

Gymnázium Antona Bernoláka

Language

Slovak	Native
English:	Advanced C1 CEFR
German:	Begginer

Top skills

Programming Languages

Python · Pytorch & Transformers · TensorFlow · React · NodeJS · FastAPI · PostgreSQL · C

Programming Tools

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

Soft skills

Adaptability · Communication · Time Management · Responsibility · Creativity · Proactivity

About Me

I am an AI Intern and Master's student at FIIT STU with hands-on experience in NLP, and Computer Vision through my bachelor's thesis & experience at KInIT.

I enjoy translating ideas into runnable experiments and thinking about AI as part of complete, usable products - not just isolated models. I also have a background in software development, which helps me see the bigger picture.

Work Experience

Trainee AI/ML Engineer @ Softec

Intern Researcher in Bratislava, Slovakia

- ½ June 2026 - present
- AI, machine learning (Computer Vision)
- Fraud detection

NLP Research Intern @ KInIT

Intern Researcher in Bratislava, Slovakia

- June 2025 - ½ June 2026
- AI, machine learning (Natural Language Processing)
- Mechanistic interpretability & Memory-efficient finetuning
- Evaluation

Projects

Language specific neurons

Python · Transformers · HF

- Identifying 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 analysis and finetuning of targeted neurons
- Ran experiments to fine-tune language-specific neurons selectively, **improving low-resource language** performance **without degrading** the model's other capabilities
- + PyTorch hooks, LoRA, Quantization, Entropy analysis (LAPE)
- + Transformer architecture, Fine-tuning strategies, GPU computing

Pedestrian Trajectory Prediction

Python · PyTorch

Bachelor's Thesis

- Built a custom multi-encoder U-Net architecture from scratch, inspired by medical imaging - adapting cross-domain techniques to pedestrian motion prediction
- Prepared a custom dataset pipeline across 6 surveillance datasets, including multi-modal inputs: trajectory maps, obstacle maps, scene context, and agent-centric crops
- Designed and trained models with multiple loss functions to capture spatial distribution of future positions
- Ran ablation studies across all input modalities
- + Multiple-modal inputs, Weight & Biases
- + Dataset preprocessing, Ablation study, Heatmap regression

Image segmentation

Python · PyTorch

- Trained a U-Net model from scratch on the CityScapes dataset for pixel-level semantic segmentation
- Designed and compared multiple training approaches, evaluating performance
- + Model from scratch
- + Experiment tracking (Weights & Biases)
- + Team work

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 on the GitHub page