Jan Sobotka

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EDUCATION

Czech Technical University, Faculty of Information Technology   July 2021 – July 2024 (expected)
Bachelor's degree in Informatics, Specialization in Artificial Intelligence   *Prague, CZ*
- Weighted grade average: **1.05** (scale of 1.0 to 4.0, 1.0 is the best)
- Ranked among the **top 5%** of students in the majority of courses.

WORK EXPERIENCE

Computational Systems Neuroscience Research Intern   Sep. 2023 – ongoing
Faculty of Mathematics and Physics, Charles University   *Prague, CZ*
- Working on deep learning-based decoding of neural activity for use in brain-machine interfaces.
- Bachelor thesis titled *Decoding visual stimuli from cortical activity using neural networks* under the supervision of Mgr. Ján Antolík, Ph.D. and his Ph.D. student Luca Baroni.

Computational Neuroscience Research Intern   July 2023 – Sep. 2023
Biozentrum, University of Basel   *Basel, CH*
- Worked on the research project *Bistable Dendrites Matter: Auto-Associative Memory in Networks of Neurons* under the supervision of Dr. Everton Agnes.
- Designed computational models of spiking neural networks and analyzed the role of bistable dendrites in memory.

AI/ML Engineer Junior   June 2021 – June 2023
Generali Česká pojišťovna   *Prague, CZ*
- Prepared a machine learning pipeline that improved the accuracy of product recommendations by ∼**35%**.
- Built computing infrastructure for the company's internal data science community with over 90 members.
- Applied deep learning approaches to various projects, including product and text recommendation, client departure prediction, email classification, and unsupervised customer segmentation.

IT Generalist   Feb. 2020 – June 2021
Startup Disrupt   *Prague, CZ*
- Deployed several websites and cloud services on AWS.
- Led the development of a web application for ticket sales.
- Prepared IT setup for over 30 offline/online events.

Junior DevOps Intern   July 2020 – Sep. 2020
*Cloudinfrastack*   *Prague, CZ*
- Built server-side applications in Golang.
- Deployed custom automation services.

PUBLICATIONS

Jan Sobotka, Petr Šimánek, Daniel Vašata (2024).   DOI 🔗 | Preprint 🔗
Investigation into the Training Dynamics of Learned Optimizers.
*The 16th International Conference on Agents and Artificial Intelligence (**ICAART 2024**).*

Jan Sobotka, Petr Šimánek (2024).   DOI 🔗
Investigation into the Training Dynamics of Learned Optimizers (Student Abstract).
*The 38th Annual AAAI Conference on Artificial Intelligence (**AAAI-24**).*

Selected Projects

Deep Reinforcement Learning for Optimal Experimental Design in Biology   Jan. 2023 – June 2023
- Open research project focused on the efficient estimation of biological system parameters (OpenBioML 🔗).
- Implemented the TD3 RL algorithm and designed a pipeline for experiments on an HPC cluster.

Generative Models of Regulatory DNA Sequences Based on Diffusion Models   July 2022 – Dec. 2022
- Open research project investigating the application of diffusion models to genomics data (OpenBioML 🔗).
- Prepared data preprocessing and unit testing for the pipeline.
- Initiated experimental research focused on exploring the synergy between diffusion models and hypernetworks.

Reinforcement Learning with Deep Q-Learning (Highway Driver Environment) 🔗   Jan. 2021 – Feb. 2021
- Implemented deep Q-learning for autonomous driving in a self-made game environment.

Extracurricular Activities

Participant of the ROBOT ICT Summer Academy   Aug. 2021 – Aug. 2021
- Acquired hands-on experience with Robotic Process Automation (RPA) development using UiPath.

Organizer of the Traion Community of Student Entrepreneurs   June 2020 – Feb. 2021
- Organized offline meetings, educational seminars, and workshops targeted at startups and entrepreneurship.

Volunteer for an Entrepreneurship Education Program for Students   Dec. 2019 – Aug. 2020
- Organized events and wrote a technology/entrepreneurship blog for the Soutěž and Podnikej organization.

Pitcher at the Czech Republic National Baseball Team U-15   Jan. 2017 – July 2017
- Secured third place at the U-15 European Baseball Championship 2017.

Honors and Awards

Merit-Based Scholarship for Academic Achievements: Czech Technical University | 2021, 2022, 2023
National Benchmark Exam in Mathematics: Scored higher than 97% of the 875 test takers | SCIO 🔗 | 2021
Algorithms & Programming Competition FIKS: 4th out of 107 contestants | Czech Technical University | 2020
TOP25 Czech High School Students of the Year 2020: Selection based on extracurricular activities | 2020