

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: **1.04** (1.0 is the highest, 4.0 indicates failing)
- Ranked among the **top 5%** of students in the majority of courses.

WORK EXPERIENCE

Computational Neuroscience Research Intern July 2023 – Sep. 2023
Biozentrum, University of Basel Basel, CH

- Worked on the research project *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 Vařata (2024). Preprint 📄
Investigation into the Training Dynamics of Learned Optimizers.
16th International Conference on Agents and Artificial Intelligence (ICAART 2024).

Jan Sobotka, Petr Šimánek (2024).
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 policy gradient 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