

# 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** (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 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 Vařata** (2024). 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).  
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

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- 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

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**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