

Csanád Budai

Budapest, Hungary, October 16, 2004

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EXPERIENCE

- Systems and Control Lab** HUN-REN Institute for Computer Science and Control (SZTAKI)
Software Developer (Part-time) Jan 2024 - Present
Developed reinforcement learning algorithms for the autonomous car platform F1TENTH. Worked on bridging the sim-to-real gap using domain randomization, and created a simulator learning environment. Part of the Autonomous Systems National Laboratory. Conference article "End-to-end Reinforcement Learning for Autonomous Racing: Bridging the sim-to-real gap" accepted to American Control Conference 2025.
- University Research Fellowship Programme - Adaptive RL** EKÖP/UNKP, BME
Student researcher Sep 2023 - Present
Working on adaptive RL methods that enable online learning. Advisor: Budai Csaba, Assistant professor at MOGI
- IPhO (International Physics Olympiad) Hungarian preparation camps** Hungary
Chief organiser Dec 2023 - Present
Organised the first three IPhO preparation camps: "Fagypont" Physics camps [link], and the "Forrás pont" Physics camp [link] for the most talented hungarian high-school students interested in competitive physics.

EDUCATION

- Budapest University of Technology and Economics (BME)** Budapest, Hungary
Mechatronics engineering BSc; GPA 5.0/5.0 Sep 2023 - Present
- Deák Square Lutheran High School** Budapest, Hungary
Advanced mathematics class 2015 - 2023
- Milestone Institute** Budapest, Hungary
Student, President of the Natural Sciences Society 2020 - 2024

TEACHING EXPERIENCE

- Lecturer at the Special College of Mechanical Engineering** GSZK, BME
Holding lectures for first-year students before midterms in math and programming 2024 - Present
- Private tutor teaching Mathematics and Physics** Remote and in person
Teaching high-school students calculus, physics, and entrance exam preparation 2021 - Present
- Programming teacher at Alphacademy** Remote
Teaching C++ and Logo programming languages to students May 2023 - Jan 2024
- Chess teacher at Budapest British International Academy** Budapest, Hungary
Organising the chess club at BBIA for primary school students, teaching the basics of chess 2021 - 2023

COMPETITION RESULTS

- F1TENTH International Autonomous Racing Competition - 12th in Yokohama, Japan, 5th in Milan
- 2024/25 Students' Scientific Conferences - University 2nd, National 1st, International 1st (EELISA) prize with work "Deep reinforcement learning methods for the motion control design of the F1TENTH electric vehicle: bridging the sim-to-real gap" [link]
- PLANCKS, Physics League Across Numerous Countries for Kick-ass Students - 13th Dublin, Ireland 2024, 32nd Barcelona, Spain 2025
- IPhO - International Physics Olympiad 2023 Bronze medalist, Tokyo, Japan
- EuPhO - European Physics Olympiad 2023 Bronze medalist, Hannover, Germany
- National Olympiad Finals - Physics 6th and 11th, Mathematics 15th, Programming 23rd, Philosophy 8th
- International Competition for Young Debaters - National 1st place in 2020

SCHOLARSHIPS AND AWARDS

- National Higher Education Scholarship 2024 - awarded to the top 0.8% of students studying at the Faculty of Mechanical Engineering BME
- Atlas Fellowship 2023 - Atlas Finalist, a highly selective scholarship for students interested in science, philosophy, and the future
- Lutheran Church Merit Scholarship – 2021, 2022, 2023

SKILLS

- Programming:** python, pytorch, C/C++, bash, ROS2, deep learning, reinforcement learning, R, arduino
- Modelling:** Fusion 360, Autodesk Inventor, Prusaslicer
- Languages:** English (native, Toefl 112/120), German (proficient, B2), Hungarian (native)