

Alexander Marc Spiridonov

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📅 04/09/2000



Education

09/2022 – present	MSc. Robotics, Systems and Control, ETH Zurich
09/2019 – 09/2022	BSc. Mechanical Engineering, ETH Zurich final grade: 5.5 (Top 3%)
09/2011 – 06/2019	Abitur, Humboldt-Gymnasium Vaterstetten (HGV) final grade: 1.0

Publications

2023	SpaceHopper: A Small-Scale Legged Robot for Exploring Low-Gravity Celestial Bodies , Alexander Spiridonov, Fabio Buehler, Moriz Berclaz, Valerio Schelbert, Elena Krasnova, Emma Steinke, Jonas Toma, Joschua Wuethrich, Recep Polat, Wim Zimmermann, Philip Arm, Nikita Rudin, Hendrik Kolvenbach, and Marco Hutter Under review in IEEE Robotics and Automation Letters
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Research Experience

04/2023 – present	Research Project , Optimization & Decision Intelligence Group, ETH Zurich Working on Adaptive Safety for Active Exploration in MDPs, using Convex RL.
11/2022 – present	Research Assistant , Robotic Systems Lab, ETH Zurich Working on Deep RL Control of the Robot SpaceHopper as part of the European Space Agencies PETRI Program.
11/2022 – 04/2023	Semester Project , Robotic Systems Lab, ETH Zurich Worked on Imitation Learning from Graph Based Expert Demonstrations to Pre-Train Deep RL Path Planners for ANYMal in Parkour Terrains.
02/2022 – 07/2022	Bachelor Thesis , Robotic Systems Lab, ETH Zurich Worked on highly parallelized Genetic and Supervised Parameter Tuning Methods for fast and accurate Zero Shot Sim to Real Transfer.

Teaching Experience

02/2022 – 06/2022	Teaching Assistant , Institute of Electromagnetic Fields Taught exercise classes for the course Electronics and Circuits.
09/2021 – 02/2022	Teaching Assistant , Mechanics and Materials Laboratory Taught exercise classes for the course Dynamics.

Projects

09/2021 – 06/2022 **Space Hopper**, *Team Lead - Modeling & Control*
Created the Deep RL control pipeline, trained and deployed locomotion policies.

Talks and Presentations

12/2022 **IIT Bombay**,
Followed an invitation to present the legged robot SpaceHopper at Techfest 2022

05/2022 **TEDxThun**, *Talked about the potential of legged robots for the exploration of asteroids and moons*

Awards

05/2019 **e-fellows scholarship**, *e-fellows.net*

05/2019 **High School Graduate Award in Physics**, *German Physical Society*

Skills

Programming Languages

Python, C, C++, MATLAB

Frameworks

UNIX, PyTorch

Languages

German, English, Bulgarian, Latin

Certificates

Cambridge English Certificate (C2)

Selected Courses

Mathematics:

Analysis I/II/III, Complex Analysis, Linear Algebra I/II, Probability Theory and Statistics

Computer Science:

Control Theory I/II, Models Algorithms and Data, Dynamic Programming and Optimal Control, Optimization for Data Science, Probabilistic Artificial Intelligence, Foundations of Reinforcement Learning, Large Language Models