Alexander Marc Spiridonov

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🗓 04/09/2000

↖ https://aspiridon0v.github.io/

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

Research Experience

04/2023 – present	**Research Project,** *Optimization & Decision Intelligence Group, ETH Zurich* Working on a notion of adaptive safety for Active Exploration in MDPs, using Convex RL.
11/2022 – present	**Research Assistant,** *Robotic Systems Lab, ETH Zurich* Working on the Deep RL control concept of the robot SpaceHopper as part of the European Space Agencies PETRI Program.
11/2022 – present	**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. Currently working towards a publication.
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	**SpaceHopper,** *Team Lead - Modeling & Control* Created the Deep RL control pipeline, trained and deployed locomotion policies.

Talks and Presentations

12/2022	**IIT Bombay,** *Official ETH Ambassador at IIT Bombay Techfest 2022. Presented the legged robot SpaceHopper.*
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	**Frameworks**
Python, C, C++, MATLAB	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, Probalistic Artificial Intelligence, Foundations of Reinforcement Learning