Alexander Marc Spiridonov

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📅 04/09/2000

🔗 https://aspiridon0v.github.io/

in https://www.linkedin.com/in/alexander-marc-spiridonov-66a1b2223/

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 4%)
09/2011 – 06/2019	**Abitur,** *Humboldt-Gymnasium Vaterstetten (HGV)* final grade: 1.0

Publications, Preprints, and In-Preparation

2024	**SpaceHopper: A Small-Scale Legged Robot for Exploring Low-Gravity Celestial Bodies,** *Alexander Spiridonov, Marco Hutter et. al.* IEEE International Conference on Robotics and Automation

Research Experience

06/2024 – present	**Graduate Research Fellowship,** *INSAIT* Working on foundation models for robotics.
11/2023 – 05/2024	**Research Assistant,** *Secure, Reliable, and Intelligent Systems Lab, ETH Zurich* Developing a comprehensive benchmarking framework for evaluating compliance of foundation models with the EU AI Act.
11/2022 – 12/2023	**Research Assistant,** *Robotic Systems Lab, ETH Zurich* Developing the Deep RL control concept of the robot SpaceHopper as part of the European Space Agencies PETRI Program.

Selected Projects

04/2023 – 06/2023	**Course Project,** *Optimization & Decision Intelligence Group, ETH Zurich* Worked on Safe Active Exploration in MDPs with correlated state-action pairs using Convex RL.
11/2022 – 05/2023	**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 robot in parkour terrains.
09/2021 – 06/2022	**Focus Project,** *Robotic Systems Lab, ETH Zurich* Team Lead - Modeling & Control of SpaceHopper, created the Deep RL control pipeline, trained and deployed locomotion policies.

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.

Talks and Presentations

12/2022	**IIT Bombay,** *Official ETH Ambassador at IIT Bombay Techfest 2022.*
05/2022	**TEDxThun,** *Talked about the potential of legged robots for the exploration of asteroids and moons*

Awards

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, Machine Perception, Reliable and Trustworthy Artificial Intelligence