

# Alexander Marc Spiridonov

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📅 04/09/2000

🖱 <https://aspiridonov.github.io/>

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



## Education

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

## Publications, Preprints, and In-Preparation

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2023	<b>SpaceHopper: A Small-Scale Legged Robot for Exploring Low-Gravity Celestial Bodies, Alexander Spiridonov, Marco Hutter et. al.</b> Under review in IEEE International Conference on Robotics and Automation
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## Research Experience

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11/2023 – present	<b>Research Assistant, Secure, Reliable, and Intelligent Systems Lab, ETH Zurich</b> Developing a comprehensive benchmarking framework for evaluating compliance of foundation models with the EU AI Act.
11/2022 – 12/2023	<b>Research Assistant, Robotic Systems Lab, ETH Zurich</b> Developing the Deep RL control concept of the robot SpaceHopper as part of the European Space Agencies PETRI Program.

## Selected Projects

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04/2023 – 06/2023	<b>Course Project, Optimization &amp; Decision Intelligence Group, ETH Zurich</b> Worked on Safe Active Exploration in MDPs with correlated state-action pairs using Convex RL.
11/2022 – 05/2023	<b>Semester Project, Robotic Systems Lab, ETH Zurich</b> Worked on Imitation Learning from graph-based expert demonstrations to pre-train Deep RL path planners for ANYmal robot in parkour terrains.
02/2022 – 07/2022	<b>Bachelor Thesis, Robotic Systems Lab, ETH Zurich</b> Worked on highly parallelized genetic and supervised learning methods for zero shot sim to real transfer of Deep RL policies.
09/2021 – 06/2022	<b>Focus Project, Robotic Systems Lab, ETH Zurich</b> Team Lead - Modeling & Control of SpaceHopper, created the Deep RL control pipeline, trained and deployed locomotion policies.

## Teaching Experience

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- 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

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- 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

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

## Skills

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### Programming Languages

Python, C, C++, MATLAB

### Frameworks

UNIX, PyTorch

## Languages

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German, English, Bulgarian, Latin

## Certificates

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**Cambridge English Certificate** (C2)

## Selected Courses

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### 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