Alexander Marc Spiridonov

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Education

09/2022 – 06/2025 **MSc. Robotics, Systems and Control,** *ETH Zurich*
final grade: 5.64

09/2019 – 09/2022 **BSc. Mechanical Engineering,** *ETH Zurich*
final grade: 5.5 (top 3%)

Publications, Preprints, and In-Preparation

2025 **Generalist Robot Manipulation Beyond Action Labeled Data,**
Conference on Robot Learning (CoRL) 2025
Alexander Spiridonov, Jan-Nico Zaech, Nikolay Nikolov, Luc Van Gool, Danda Pani Paudel / *paper* / *website*

2024 **SpaceHopper: A Small-Scale Legged Robot for Exploring Low-Gravity Celestial Bodies,** *IEEE International Conference on Robotics and Automation (ICRA) 2024*
Alexander Spiridonov, Fabio Buehler, Moriz Berclaz, Valerio Schelbert, Jorit Geurts, Elena Krasnova, Emma Steinke, Jonas Toma, Joschua Wuethrich, Recep Polat, Wim Zimmermann, Philip Arm, Nikita Rudin, Hendrik Kolvenbach, Marco Hutter / *paper* / *website*

2025 **From Simulation to Parabolic Flight: Control and Validation of Legged Robotic Jumping in Microgravity,** *IEEE Transactions on Field Robotics (Under Review)*
Philip Arm*, Valerio Schelbert*, **Alexander Spiridonov***, Fabio Buehler, Moriz Berclaz, Jorit Geurts, Hendrik Kolvenbach, Fabian Tischhauser, Hendrik Kolvenbach, Marco Hutter / *website* / *CNN Tech for Good* / *BBC*

Work Experience

06/2024 – 06/2025 **Graduate Research Fellowship,** *INSAIT*
- Built scalable VLA pre-training infrastructure from scratch using JAX on TPUs
- Proposed novel method for co-training with human and robot data
- Published at *CoRL 2025* , *github*

11/2023 – 05/2024 **Research Assistant,** *Secure, Reliable, and Intelligent Systems Lab, ETH Zurich*
- Built an evaluation framework for foundation models under the EU AI Act
- Launch covered by *TechCrunch* , *Reuters* and 100+ stars on *github*

11/2022 – 12/2023 **Research Assistant,** *Robotic Systems Lab, ETH Zurich*
- Built the RL training and sim-to-real pipeline of the SpaceHopper robot
- Deployed in zero-gravity with the European Space Agency (ESA), *video*

Other Selected Experience

06/2025 – Present **Robot Learning Lead,** *ETH Robotics Club, ETH Zurich*
- Leading 15 students in the ETH Robotics Club on post-training VLAs for bi-manual dexterous manipulation

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. / *paper* / *poster*

09/2021 – 06/2022 **Focus Project,** *Robotic Systems Lab, ETH Zurich*
- Team Lead - Modeling & Control of SpaceHopper, helped build the software and control stack from the ground up

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

10/2025 **CoRL 2025 - Spotlight Talk,**
Talked about my paper Generalist Robot Manipulation Beyond Action Labeled Data

12/2022 **IIT Bombay,** *Ambassador for ETH Zurich at IIT Bombay Techfest 2022.*

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

Awards

2024 **ICRA 2024 Travel Grant,** *IEEE/RAS*

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

Skills

Languages
German (native), English (native), Bulgarian (native), Russian (beginner), Latin (beginner)

Technical Skills
Languages: Python, C, C++, HTML, SQL, Javascript ***Frameworks:*** PyTorch, JAX, CUDA, XLA, React, A-Frame, Three.js, ROS ***Robotics Simulators:*** IsaacGym, IsaacSim, Mujoco, Pybullet, Sapien

Reviewer

Conference on Robot Learning (CoRL) 2025, IEEE Robotics and Automation Letters (RAL)

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