

Davide Liconti

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Education

2024–Current **PhD at Soft Robotics Lab, ETH Zurich**

Focus on imitation learning for dexterous robotic manipulation. Current topics include aligning human and robot representations for manipulation, action space reduction for high-dof systems, co-optimization of design and control of musculoskeletal robots. Submitted papers to high level conferences (CoRL, ICRA, RoboSoft) under the supervision of Prof. Dr. Robert Katzschmann.

2021–2023 **Robotics, Systems and Control MSc, ETH Zurich, Final Grade: 5.75/6**

Focus on Robot Dynamics, Control Systems, Model Predictive Control (MPC), Reinforcement Learning (RL), Computer Vision.

2018 – 2021 **BSc Mechanical Engineering, Politecnico di Torino, Final grade: 110/110 cum laude**

Focus in mechanical design, applied mechanics, and machine systems (electrical, thermal, hydraulic).

○ Talent Track - Selected as one of the top 2% students.

○ Angelini Industries Scholarship - Awarded to top 0.1% students in technical-scientific universities in Italy.

Work Experience

Dec 2023 – **Research Assistant, Soft Robotics Lab, ETH Zurich**

Apr 2024 ○ Worked on imitation learning for dexterous manipulation, focusing on latent representations for robot hand motion and synthetic trajectory generation for grasping.

Sept 2022 – **Computer Vision Research Intern, Astrivis, Zurich**

Mar 2023 ○ Developed deep learning algorithms for high-resolution body part segmentation, 3D pose estimation, keypoint detection, and precise measurement extraction.

○ Built an AR shoe virtual try-on application, improving data labeling efficiency by 50x.

○ Wrote and integrated Python and C++ code with CI/CD tools.

Feb 2023 – **Teaching Assistant, ETH Zurich, Zurich**

Jun 2023 ○ Guided 20+ students through labs on signal processing, robot actuation, visual servoing, and PID control.

○ Improved both hardware and software for lab classes.

Mar 2021 – **Engineering Intern, Podium Advanced Technologies, Italy**

May 2021 ○ Analyzed the car assembly process to improve efficiency and quality for the "DELTA Futurista" production.

○ Wrote technical documentation for production, testing, and field engineering.

Projects and Publications

Mar 2023 – **Master Thesis, Soft Robotics Lab, ETH Zurich**

Nov 2023 ○ Developed a novel method for few-shot imitation learning on a 23-DoF dexterous robotic hand.

○ Published "Leveraging Pretrained Latent Representations for Few-Shot Imitation Learning on a Dexterous Robotic Hand" [Accepted at Humanoids 2024](#)

Feb 2022 – **Semester Project, Robotics Systems Lab, ETH Zurich**

Jun 2022 ○ Conducted a feasibility study and the thermal modeling for a low gear ratio actuator on a legged robot for lunar exploration, in collaboration with ESA.

○ Published "Preliminary Design of Actuators for Walking Robot on the Moon" [Accepted at ASTRA 2022](#).

May 2021 – **Bachelor Thesis, Podium Advanced Technologies, Italy**

Jul 2021 ○ Analyzed dynamics and design and performances of a car suspension system for the "Lancia Delta Futurista".

Skills

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|-------------|--|------------|---|
| Programming | Python, C++, C, Git, MATLAB, Arduino IDE, Docker, Cuda | Frameworks | TensorFlow, PyTorch, IsaacGym, Mujoco, ROS1/2 |
| AI | Deep Learning, Computer Vision, Imitation Learning, Reinforcement Learning | Languages | English (C1), Italian (Native), German (A2) |