Alberto De Luca

Zurich, Switzerland adeluc@ethz.ch +39 3298223927 albertodel.github.io

Education

ETH Zürich: *MSc in Robotics, Systems and Control* *Sept 2024 – Current*

- **Relevant Coursework:** Model Predictive Control, Probabilistic AI, Numerical Optimization
- **GPA:** 5.4/6

Politecnico di Milano: *BSc in Automation Engineering* *Sept 2021 – July 2024*

- **Relevant Coursework:** Information Systems, Foundations of Robotics, Electrical Machines and Drives
- **Final Grade:** 110 Cum Laude

Experience

Control Engineer, SAPIENS Robotic Hand Prosthesis *April 2023 – July 2024*

- Student-led project of the Automation Engineering Association at Polimi
- Developed real-time control software for microcontrollers in C++, and performed system modeling and simulation in MATLAB/Simulink.

Industrial Internship, Ortoverde *Aug 2021 – Sept 2021*

- Collaborated with the head engineer to collect, process, and analyze production data.
- Supported machine adjustments based on data analysis, reducing material waste by 10%

Selected Projects

Meta Learning Model Predictive Control, Automatic Control Lab

- Semester Project: Developed meta-learning algorithms for Energy Hub MPC to adapt to changing energy prices.
- Built a Python simulation framework using CVXPY and JAX to demonstrate the effectiveness of the proposed method.

Federated Learning for Financial Forecasting

- Research on **privacy preserving** Machine Learning applied to financial markets
- **Achieved:** publishable results; paper accepted at the Computing Conference, London, July 2026. arxiv

Robust Truck Thermal Control

- Implemented advanced MPC schemes for thermal regulation in trucks in MATLAB.

System ID and Control Quanser Qube Servo 2

- Performed system identification and control design for an electromechanical servo system using MATLAB/Simulink. link

Technical Skills

Programming: Python, C++, MATLAB, Simulink, Bash
Robotics & Control: State estimation, MPC, nonlinear control, trajectory optimization, optimal control
Computer Vision: Visual odometry, OpenCV, Diffusion Models
Machine Learning: PyTorch, JAX, Numpy
Tools: Linux, Git, Docker, LaTeX, OpenCV, CVXPY

Honors and awards

Lead The Future Mentorship *2023 - Present*

- Largest Mentorship programme for STEM Excellence in Italy
- Admission: 13% rate.

Best freshmen award *2022*

- 1000€ award given to a percentage of the top performing students in the first year of a Bachelor's degree program