

# Alessandro Canevaro

T.I.M.E. DOUBLE DEGREE STUDENT

Munich, Germany

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## Summary

I am a T.I.M.E. (Top International Managers in Engineering) double degree student currently pursuing an MSc in Control Systems Engineering at the University of Padua and an MSc in Computer Science and Engineering at the Technical University of Denmark. My interests lie in the area of Artificial Intelligence and Algorithms for Computer Vision and Robotics. I am an ambitious and hardworking person who is always eager to learn new skills.

## Education

### Technical University of Denmark

Copenhagen, Denmark

M.S. IN COMPUTER SCIENCE AND ENGINEERING

Sep. 2021 - Present

- **Relevant courses:** Machine Learning Operations, Algorithm for Massive Data Sets, Perception for Autonomous Systems.
- **Project in Computer Vision:** built a tracking and position estimation software for moving objects on a conveyor belt with OpenCV and Python. Main tasks: camera calibration and rectification; object detection with background subtractor algorithms, position estimation with Kalman filtering techniques; object classification with CNN.
- **Project in Autonomous Navigation:** developed a simulated robotic system using ROS. Implementation of path-planning and navigation algorithm for indoor scenarios.
- **Project in Machine Learning Operations:** developed a deep learning model in PyTorch for the sign language recognition problem with a focus on CI/CD pipelines on GitHub, automated testing, training monitoring, data visualization, and cloud deployment.
- **Project in Reinforcement Learning:** Implemented and tested the Value Propagation Networks algorithm on a custom grid world environment. Great training performances are achieved thanks to the use of the A3C algorithm in the RAY library.

### University of Padua

Padua, Italy

M.S. IN CONTROL SYSTEMS ENGINEERING

Oct. 2020 - Present

- Top International Managers in Engineering double degree student.
- **Relevant courses:** Machine Learning, Computer Vision, Robotics and Control, Convex Optimizations, Systems Theory.
- **Project in Robotics:** analysed the equations of motion for the SCARA robot; designed a PD with gravity compensation controller and a Feedback linearization controller, for trajectory tracking purposes; implementation and testing in MATLAB and Simulink.
- **Project in Computer Vision:** developed a computer vision algorithm for image detection on a boats dataset using OpenCV and C++. Great performances are achieved through a combination of traditional vision algorithms and modern machine learning approaches. Testing on multiple datasets with IoU metric

### University of Padua

Padua, Italy

B.S. IN INFORMATION ENGINEERING

Oct. 2017 - Jul. 2020

- **Relevant exams:** Data Analysis, Algorithms for Engineering, Internet and Multimedia Laboratory, Control Theory.
- **Thesis title:** Control systems for magnetic levitation trains: modelling and analysis of the levitation system; design and comparison of different control solutions.
- Final Grade: 110/110 cum laude (top 5% of students)

## Work Experience

### Huawei

Munich, Germany

MASTER THESIS STUDENT

Jan. 2023 - Present

- Thesis title: Cooperative Carrying Control for Mobile Robots in Indoor Scenario.
- Design and implementation of a cooperative multi-robot motion-planning solution using reinforcement learning algorithms.
- Integration with ROS & Gazebo frameworks for 6G sensing and communication simulations

### Bruno Kessler Foundation

Trento, Italy

RESEARCH INTERN

Jun. 2022 - Aug. 2022

- Internship in Dynamics on Complex Networks at Complex Human Behaviour Lab (CHuB)
- Developed C++ algorithms to study dynamical processes that occur on top of networked systems.
- Data analysis in Python of simulated and real-world networks leads to improved models that explain the underlying data
- The use of efficient algorithms allowed to study networks with millions of nodes.

## Skills

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**Actively Using** Python (PyTorch, NumPy, Scikit-learn, Pandas), C/C++ (OpenCV, OpenMP), Git,  $\LaTeX$ .  
**Experience With** Java, Matlab & Simulink, ROS, MPI, CUDA, Linux, Docker, DVC, Google Cloud.

## Languages

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**English** proficient (IELTS 7.5 - C1)  
**German** beginner  
**Italian** native

## Extracurricular Projects

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### Matematica Dolce

*Verona, Italy*

SOFTWARE DEVELOPER

*Jun. 2017 - Oct. 2017*

- Collaborated with the project coordinator (prof. D. Zambelli) in developing a program to automatically generate maths exercises for the open-source high school math books series Matematica dolce.
- The program allowed to generate dozens of exercises, and improve the content of the books.
- Given the attained popularity, the books were translated into Lambda books for blind students.

## Certificates

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2022 **participation certificate**, Seeds for the Future

*Huawei*

2022 **Professional Certificate**, Google Project Management

*Coursera*

2018 **participation certificate**, Formative Tutoring program

*University of Padua*

## Interests

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**Photography** Winner of two prizes for video shooting and editing a short film and an interview for the A.N.C.I.

**Aviation** I like to do plane spotting at the local airfield

**LEGO** It has been my favourite toy since my childhood and still nowadays I occasionally play with it