



## ABOUT MYSELF

MSc student in Automation Engineering at Alma Mater Studiorum - University of Bologna. I aspire to be part of a challenging environment, in which it is possible to deal with the most complex and sophisticated aspects of what has been learned during my studies, taking the automation concept to the limits of its capabilities.

## WORK EXPERIENCE

**Concordia University** Montreal (QC), Canada

**Graduate Research Intern**

08/2025 – Current

- Developed and implemented distributed algorithms for collaborative UGV-UAV swarms to ensure safe autonomous operation in dynamic environments.
- Designed and tested resilient communication and control strategies enabling real-time coordination and fault-tolerant multi-vehicle performance.
- Conducted hardware validation on Quanser platforms, integrating advanced control methods with real-time execution and safety guarantees.

**Center for research on Complex Automated Systems (CASy)** Bologna (BO), Italy

Website <https://www.leonardo.com/en/innovation-technology/open-innovation/drone-contest>

**LEONARDO Drone Contest - Director of the SLAM department**

10/2024 – Current

- Developed SLAM algorithms for autonomous drones with ArUco marker localization and sensor integration (cameras, LiDAR, IMU) for improved mapping and positioning.
- Built and updated real-time maps with obstacle detection and avoidance in dynamic environments.
- Tested and validated autonomous navigation in indoor/outdoor scenarios, optimizing drone performance and autonomy.

**Center for research on Complex Automated Systems (CASy)** Bologna (BO), Italy

**LEONARDO Drone Contest - Member of the GNC department**

01/2024 – 10/2024

- Developed and optimized UAV navigation systems with path planning, obstacle avoidance, and real-time decision-making.
- Conducted simulations and tests to enhance trajectory, detection, and adaptive optimization using AI.
- Improved indoor and outdoor UAV performance through refined algorithms and collaboration.

**UniBo Motorsport** Bologna (BO), Italy

Website <https://motorsport.unibo.it/>

**Control Systems Engineer – Formula SAE Team**

03/2024 – 06/2025

- Used MATLAB, Simulink, and LabVIEW to model, control, and test the 'e-RBT23' electric racing vehicle, including powertrain and telemetry.
- Performed racetrack and simulator testing, supporting cooling systems and applying Formula SAE regulations to boost performance.
- Collaborated in a large automotive team, managing reporting, meetings, and strict deadlines.

**ESA Elettromeccanica** Ripatransone (AP), Italy

Website <https://www.esaelettromeccanica.com/>

**Electromechanical engineering technician**

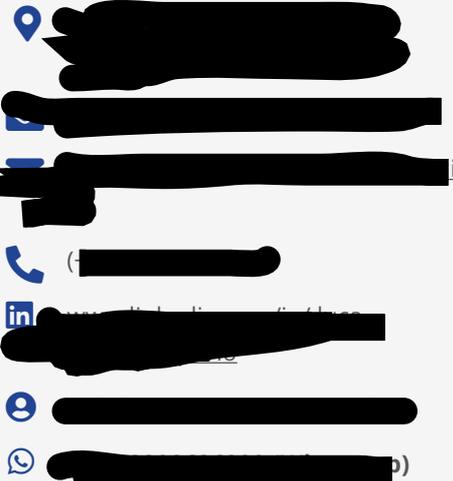
05/2019 – 06/2019

Intern/trainee - undergraduate internship

- Designed and maintained medium and low voltage systems for industrial and naval sectors.
- Wired electrical panels for cruise ships and fabricated mechanical structures.
- Applied technical expertise in team settings, meeting deadlines and customer needs.

## Luca Bachetti Spurio

## CONTACT



## EDUCATION AND TRAINING

**18/09/2023 – CURRENT** Bologna (BO), Italy

**Master's degree in Automation Engineering** Alma Mater Studiorum - Università di Bologna Scuola di Ingegneria e Architettura

Website <https://www.unibo.it/it> | **Field of study** Automation

**21/09/2020 – 14/10/2023** Bologna (BO), Italy

**Bachelor's degree in Automation Engineering** Alma Mater Studiorum - Università di Bologna Scuola di Ingegneria e Architettura

Website <https://www.unibo.it/it> | **Field of study** Electronics and automation | **Thesis** Adaptive Neuro-Fuzzy Inference System for the altitude control of a submarine

**09/2015 – 06/2020** Fermo (FM), Italy

**Technical diploma** ITT 'G. e M. Montani'

Website <https://www.istitutomontani.edu.it/web/> | **Field of study** Engineering, manufacturing and construction

## HONOURS AND AWARDS

**29/04/2021** COMAU ACADEMY

**USE AND PROGRAMMING for the Comau C5G family of robots by COMAU ACADEMY**

Credential ID: 82BmlUBwLF

**23/11/2024** Alma Mater Studiorum - University of Bologna

**Specific Training for Medium Risk – Module 3**

**01/06/2022** Alma Mater Studiorum - University of Bologna

**Specific Safety and Health Training - Module 2**

**01/06/2022** Alma Mater Studiorum - University of Bologna

**General Safety and Health Training - Module 1**

**21/12/2020** Alma Mater Studiorum - Università di Bologna

**English language assessment certificate at B2 LEVEL**

## SKILLS

Robotics Tools: ROS, OpenCV, PyGlet, PyBullet, PyChrono, OpenAI Gym, Docker | Programming languages: C, python, HTML, Matlab; | Control Systems Engineering | Arduino, DIY electronics, soldering, reparings | Git & Githubs | Codesys: LD, ST, SFC Programming | CAD: AutoCAD, SolidWorks, PTC Creo, Autodesk Fusion

## LANGUAGE SKILLS

**MOTHER TONGUE(S):** Italian

**Other language(s):**

**English**

**Listening** B2

**Spoken production** B2

**Reading** B2

**Spoken interaction** B2

**Writing** B2

*Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user*

Bologna (BO) - Italy, 01/01/2025



Luca Bachetti Spurio