

# Francesco Villari

## Education

- University of Bologna, Italy**, Master Degree in Automation Engineering Sept 2022 – Today
- University of Bologna, Italy**, Bachelor's Degree in Automation Engineering Sept 2019 – Dec 2022
- Thesis: "Path planning with the Potential Fields Method", Supervisor: Lorenzo Marconi
  - Final Grade: 105/110
- Liceo Scientifico Enrico Fermi, Bagnara Calabria, Italy**, Scientific High School Diploma Sept 2014 – July 2019
- Final Grade: 100/100 with honors

## Projects

- Leonardo Drone Contest** Bologna - Torino - Rimini, Italy Mar 2024 - Today
- Designed a multi-agent system composed of a drone and a ground rover communicating via the ROS2 platform
  - Developed control algorithms for path planning and navigation
  - Competed in the Leonardo Drone Contest at Leonardo S.p.a (Turin, October 2025)
  - Competed in the Leonardo Drone Contest at **Dronitaly 2024** (Bologna, October 2024)
  - Performed a live demonstration at the **European Robotics Forum** (Rimini, March 2024)
  - Supervisors: Prof. Nicola Mimmo and Prof. Lorenzo Marconi (DEI - University of Bologna)
- UniBo Motorsport - Vehicle Dynamics Division** Oct 2021 - September 2023  
Bologna, Italy
- Participated in the Virtual Formula competition, where a digital twin of the model was simulated in Vi-CarRealTime
  - Contributed to the setup and tuning of the physical prototype
- Design and Simulation of a Delta Robot** July 2022, Bologna, Italy
- Complete design of a Delta Robot and simulation performed in Creo Parametric

## Experience

- Youth Leadership Academy**, Erasmus Plus project Timisoara, Romania 16-24 January 2019
- Developed public speaking skills and effective team coordination
  - Practical exercises to enhance communication, leadership, and collaboration in a multicultural environment
  - Team working
- We Debate|DebateItalia**, public speaking and debating in Italian and in English Bagnara Calabria - Roma, Italy February 2017 - April 2017
- Prepared and impromptu debates on current affairs, developing critical thinking and argumentation skills
  - Engaged in teamwork to structure a compelling speech within one hour
  - Conducted research and analysis of reliable sources to support arguments with credible documentation

## Practical Skills

---

**Programming Languages:** C, Python, ROS2, Matlab/Simulink, PLC programming, LaTeX

**Software & Tools:** Docker, Git, PTC Creo Parametric, VI-CarRealTime, STM32CubeIDE, Atlas

**Hardware & Embedded Systems:** Embedded systems programming, Pixhawk, Nvidia Jetson, UAVs

**Licenses:** Unmanned Aircraft Systems (UAS) European License, Driving License (A1 - B)

## Interpersonal Skills

---

**Public Speaking:** Experienced in delivering speeches and presentations to diverse audiences

**Debate:** Active participation in structured debates on various topics, with emphasis on critical thinking and argumentation

**Teamwork & Leadership:** Strong ability to collaborate in teams and lead projects, encouraging a cooperative environment and ensuring task completion

## Languages

---

**Italian:** Native, **English:** B2, **French:** A2

