Giacomo Fregara

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Education

University of Genova *Sept 2022 – March 2025*
Master's Degree in Electronic Engineering

- GPA: 29.902/30
- Graduation grade: 110/110 cum laude
- **Master Degree Thesis:** *Development of a Quality Control system for the Motherboard with silicon optical detectors for Astrophysics applications*, in collaboration with **Istituto Nazionale di Fisica Nucleare** (INFN) and **Laboratori Nazionali del Gran Sasso** (LNGS).
- **Coursework:** Microelectronics, Digital Systems, Integrated Electronics, Sensors, Machine Learning, Deep learning, System Identification, Nonlinear Dynamics.

University of Genova *Sept 2019 - Dec 2022*
Bachelor's Degree in Electronic Engineering and Information Technology

- GPA: 29.59/30
- Graduation grade: 110/110 cum laude
- **Thesis:** *Implementation of a hexapod robot controller based on a network of spiking neurons*
- **Coursework:** Calculus, Geometry and Linear Algebra, Physics, Signals and Systems for Telecomunications, Programming, Automatic Controls, Systems Theory, Circuits Theory, Electronics, Electromagnetic Fields, Optimization and Statistics.

Liceo Scientifico Statale "G.D. Cassini" *Sept 2014 - July 2019*
High School Diploma

- Final grade: 93/100
- Obtained Stafford House's English Course **Certificate of Achievement** at **Upper Intermediate/Advanced Level** in March 2018

Experience

Tutoring *October 2021 - Present*

- Private lessons for both high school and university students in Maths, Physics and Electronics courses.

School-Work Alternation (*PCTO*) *Genova, IT*
L.S.S. "G.D. Cassini" *Sept 2016 - May 2019*

- *POLARIS*: At the Museum of Natural History of Genova, preparation, technical collaboration and presentation of speakers and topics of astronomy lectures; contributed in presenting astronomical observations to the public
- *Dipartimento di Matematica (DIMA)*: followed lessons on descriptive and inferential statistics
- *ISVAP*: followed lessons about *safety at work* and obtained recognition documents on "General security" and "Specific security"
- *AMIU*: Controlling the proper sorting and subsequent disposal of waste

Projects

Use of BAS algorithm for closed-loop control via PID of autonomous marine navigation systems *github.com/JackCode784/CyberPhysical-Systems-Project*

- Implemented and used the *Beetle Antenna Search* algorithm to determine a PID controller's parameters in order to regulate a system for autonomous navigation.
- Tools Used: MATLAB, Simulink
- University course "Cyber-Physical Systems" exam

Technical skills

Programming languages: Assembly (for "simplified" microcontroller DMC8), C, C#, JavaScript, Python, MATLAB, SQL

Hardware Description Languages and others: VHDL, Spin, nuXmv

Applications: Vivado Design Suite, SPICE (LTSPICE, PSPICE), Digital Electronics Deeds, Magic VLSI, Tensorflow Keras, scikit-learn, Altair Feko, ANSYS, Visual Studio, Visual Studio Code, Unity, Postman, Arduino IDE

Soft skills

Teamwork, adaptability, communication, active listening