

Ermanno Fiorillo

Master's Student in Electrical Engineering, Information Technology and Computer Science at
RWTH Aachen University

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🌐 [Personal Portfolio](#)

🌐 [Linkedin/Ermanno Fiorillo](#)

🐙 [Github/ErmannoF00](#)

About Me

Bioengineer and Master's student at [RWTH Aachen](#), specializing in Electrical Engineering, IT, and Computer Science. Research experience across ML, signal processing and neuromorphic hardware implementations at [Forschungszentrum Jülich](#), Helmholtz Institute in Aachen and [Italian Institute of Technology](#), Genoa. Co-founder of [Young Neuromorphs](#), with strong interests in bridging neuroscience and next-gen computing.

Experience

Software Engineer Intern - Prophesee 📍 Paris, France 09/2025–Present

- ➔ Tested current dynamic vision sensor (DVS) characterization model based on KAN over 5e6 parameters.
- ➔ Researched and trained new model with accuracy increased by 15%.
- ➔ Model embedded and smoothly integrated into the sensor simulator scheme.

Student Assistant – Forschungszentrum Jülich [PGI-14] 📍 Aachen, Germany 11/2024–07/2025

- ➔ Engineered analog circuit blocks tailored for Mamba ML architecture to boost inference efficiency.
- ➔ Deployed submodules in Cadence and LTSpice, incorporating PyTorch co-simulation for enhanced circuit modelling.
- ➔ Initiated physical layout design with potential for patent filing.

AI/ML Research Project – Helmholtz Institute 📍 Aachen, Germany 04/2024–07/2024

- ➔ Developed an ML pipeline to transcribe German doctors' audio, integrating grammar correction and automating dataset generation via GUI features.
- ➔ Leveraged data from 500+ patient diagnoses to support clinical integration, enhancing transcription accuracy.

Software Engineer Intern – Italian Institute of Technology 📍 Genoa, Italy 03/2023–03/2024

- ➔ Streamlined data collection from eye-tracking and haptic sensors, supporting cognitive neuroscience research.
- ➔ Programmed a GUI for 25 participants in 1-hour sessions, enabling machine learning-based analysis of visuo-haptic sensory input.
- ➔ Troubleshooted hardware overheating issues and independently conducted full experimental runs.

Bartender & Head Waiter - Caffè Trieste Ovada 📍 Ovada, Italy 06/2019–09/2022

- ➔ Provided customer service, bartending, and cashier support in a high-traffic café.
- ➔ Assisted in catering preparation for weddings and big events, including venue setup, food service, and beverage preparation.
- ➔ Supervised and coordinated a team of 10 waiters during events hosting over 100 guests.

Education

RWTH Aachen University 04/2024 – Present

M.Sc. in Electrical Engineering, Information Technology and Computer Science

- ➔ *Major:* Biomedical Systems Engineering
- ➔ *Relevant Subjects:* AI, Embedded Systems, Image Processing, Data Analytics

University of Genoa 09/2023 – 04/2024

M.Sc. in Neuroengineering and Neurotechnologies – [1 semester]

- ➔ *Relevant Subjects:* Biomedical Data Analysis, Signal Processing, Brain-Computer Interfaces, Robotics

University of Genoa 09/2023

B.Sc. in Biomedical Engineering

- ➔ *Major:* Computer Science and Electronics Engineering
- ➔ *Relevant Subjects:* Electrical Communications, Circuit Theory, Object Oriented Programming, Signal Processing, Chemistry, Material Science

Projects

- ➔ **Probe Detection:** Object detection pipeline for drone probes using YOLOv8, with model configuration optimized via YAML
- ➔ **SystemVerilog Memristor Crossbar:** Memristive crossbar array and a spiking AdLIF neuron model in SystemVerilog for neuromorphic applications
- ➔ **Speech-to-Text Transcription GUI:** PyQt5 GUI integrating ML models for audio transcription, grammar correction, and dataset generation for further training
- ➔ **Embedded-SNN:** A lightweight spiking neural network engine designed for EEG classification on embedded devices (e.g., Cortex-M4), with training performed in Python using Brian2
- ➔ **Multifunctional Website:** Interactive website with features like online chat, media gallery, game room, and letterbox, built with a modular frontend-backend structure
- ➔ **Pathology Classification:** Comparison of ML classifiers on brain pathology datasets to improve diagnostic accuracy

More projects and source code on my [GitHub](#)

Volunteering

Co-Founder, [Young Neuromorphs](#):

- ➔ Founded a student-led community focused on neuromorphic computing. Ongoing initiatives include organizing an FPGA hackathon in collaboration with [imec](#), curating educational resources for the website, and creating a network for research and internship opportunities.

IT Team, [EESTech Aachen](#):

- ➔ Providing website maintenance and technical support. Currently coordinating a Community Hackathon sponsored by [Infineon](#).

Skills

- ➔ **Core:** Machine Learning, Signal Processing, Data Analysis, Object-Oriented Programming, Embedded Systems, Circuit Design, Electronics
- ➔ **Programming:** Python, MATLAB/Simulink, C++, SystemVerilog, (JavaScript, HTML, CSS, React.js) - (Basic Proficiency)
- ➔ **Markup:** JSON, YAML, Markdown
- ➔ **AI/ML:** PyTorch, TensorFlow, Scikit-learn, Pandas
- ➔ **EDA Tools:** LTSpice, Cadence Virtuoso
- ➔ **Dev Tools:** Git, Linux, Jupyter, VSCode, PyCharm, (GCC/LLVM)-(currently studying)
- ➔ **Soft:** Effective communication, Teamwork, Team Leadership, Flexibility, Project Coordination

Certificates

- ➔ Coursera - Stanford, Machine Learning - 2023
- ➔ IELTS Academic - 2023
- ➔ [g.tec medical engineering GmbH](#) - BCI and Neurotechnology Spring School - 2023, 2024

Honors and Awards

- ➔ **Regional Scholarship, [ALISEO Liguria](#)** – 2022
- ➔ **Merit Prize for GPA**, University of Genoa – 2021
- ➔ **Merit Prize for GPA**, University of Genoa – 2020

Languages

Language	Proficiency
Italian	C2 - Native
English	C1 - Fluent
German	A2 - Basic
French	A2 - Basic

Interests

Philosophy, Geopolitics, Chess, Swimming, Hiking, Vinyls, Cinephile (old ones better) and constantly torn between Acid Techno and Classical Jazz