Pietro Carrucciu, Graduate Research Student @ NECSTLab

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Education

MSc Computer Science & Engineering, Politecnico di Milano*, *Milan (IT)* Sep 2024–Present

- ERASMUS semester at University of Tübingen*, following DL lectures from MPI faculty (2nd lab in EU for AI Research*).
- Prospective student for the University of Illinois Chicago* Double Degree. Research Student at NECSTLab*.

BSc Computer Engineering, UniMoRe*, *Modena (IT)* Sep 2021–Sep 2024

- Graduated with 103/110 (top 5% of the class), subject-specific CGPA of **28.5/30**.
- **Thesis:** *Energy Metrics for CMOS implementations of Spiking Neural Networks** with IEEE Senior Member Professor Luca Selmi*. Selected SOTA neuromorphic approaches implemented on same 28nm process, developing an energy-wise comparison. **Results:** digital processor requires 2 to 3 OOM more Energy-per-Spike, even accounting best case performance for R/W ops.

Experience

Co-Founder, UI–UX lead @ eva (eva), advised by Prof. Marco D. Santambrogio Aug 2025–Present

- Top 100 teams in **Switch2Product*** accelerator (<10% acceptance rate).
- **Customer problem:** STEM students are missing a testing platform for their specific type of workload.
- **Tech problem:** Prove coherency of LLM-generated questions and solutions, work towards deterministic outputs.
- Developing solution using Docker-containerized PostgreSQL database with TypeScript (React) frontend and Django backend services to ensure modularity and ease of iteration for LLM libraries."

Graduate Research Student @ PMDS*, advised by Prof. Marco Brambilla Dec 2024–Present

- Developing self-supervised interpretability pipeline for CNNs using **PyTorch**, implementing gradient-based masking and feature visualization techniques on VGG16 trained on ImageNette dataset.
- Supervised by Professor Brambilla and PhD Antonio de Santis, building on their IJCAI paper*.

Electronics Division Leader @ MoRe Modena Racing Hybrid* Mar 2023–Feb 2024

- Developed **real-time** 5.8G-based telemetry Formula Student race car (sub 6ms latency); mainly C++ and Java.
- Learned to **synthesize requirements** from 50+ technical **stakeholders**. Team arrived 1st Overall in Alpe Adria, Silverstone awards.

Projects and Awards (More can be found on my my LinkedIn*)

Mentee @ Lead The Future Mentorship* Sep 2025–Present

- Among the few Italian students selected (acceptance rate <15%) for LeadTheFuture's mentorship program, receiving one-on-one guidance from mentors in Silicon Valley, CERN, DeepMind, Meta, Harvard and so on.

beyond buttons (bb): Hardware-Software Patent Mar 2025–Present

- Won an hackathon organized by Bosch; realized real market potential and currently pursuing patent through the EPO.
- Motion-based MIDI controller built on embedded board, featuring movement-based mapping and Max4Live integration (Python, C++, MIDI protocol).

Certifications

Languages: Italian (Native), English (C2*)
AI/ML: GPU101*, Google LLM Courses*, MATLAB*
edX Climate: Nature Based Solutions*, Climate Science*
Other: Academic Writing @ TUM*