PAOLO VEZZINI

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PERSONAL INFORMATION

Proactive and curious engineer with expertise in embedded systems, AI, and cloud technologies. My passion lies in applying innovative solutions to solve real and concrete challenges, with a deep motivation for the field of robotics and the integration of various technical disciplines. Skilled at working in collaborative teams, combining technical knowledge with problem-solving and critical thinking to provide real impact.

EDUCATION

- **Master's Degree in Computer Engineering – 30/04/2025:**

  University of Pavia – Specialization in Embedded IoT Systems – Final grade: 110/110.

- **Bachelor's Degree in Electronics and Computer Engineering – 15/03/2023**

  University of Pavia - Final grade: 98/110.

SKILLS

Technical Skills

- **Programming & Software Development**: Software Engineering, Object Oriented Programming (OOP), IoT Microcontroller Programming, Parallel programming (OpenMPI), **C/C++, Python, Assembly (MIPS, ARM), Java, Kotlin**
- **Data & AI**: Machine Learning, Deep Learning, TinyML, Data Analysis, Computer Vision, Information Security
- **Platforms & Tools**: Cloud Infrastrctures (AWS, GCP), Relational Databases (MySQL), LabVIEW, Git, LaTeX, PyTorch, Python libraries (OpenCV, ScikitLearn, Librosa,…)
- **Embedded Systems & Robotics**: Mechatronics, Signal Acquisition, Communication Interfaces, Microcontroller Programming, RTOS, FPGA Programming (VHDL), Fundamentals of Electric Motors, Robot control, Mapping & Pathplanning

Soft Skills

- **Teamwork, Problem solving, Critical thinking, Curiosity, Creativity, Initiative, Work Ethic, High Attention to Details**

EXPERIENCE

Master's Thesis: October 2024 – April 2025

- Developed lightweight deep learning models (TinyML) for real-time classification of heart murmurs on resource-constrained microcontrollers.
- Optimized models with quantization and compressive sensing, achieving improvements in energy efficiency and inference speed.
- Outcome: practical deployment of AI models in healthcare IoT scenarios.

Cloud Computing Project: 2024

- Built a scalable cloud infrastructure on AWS for a smart home automation system.
- Ensured real-time and low-power communication via MQTT, enabling interoperability across IoT devices.
- Delivered a functional and reliable prototype demonstrating IoT–cloud integration and scalability.

IoT Programming Project: 2023

- Designed and implemented a BLE-controlled vehicle with obstacle detection.
- Combined hardware prototyping, CAD design, and embedded programming to achieve a fully functional prototype.

Bachelor's Thesis: November 2022 – March 2023

- Designed a post-quantum cryptography algorithm implementation on FPGA, compliant with NIST standards.
- Evaluated trade-offs between latency, throughput, and resource utilization, providing insights into cybersecurity resilience on embedded devices.

LANGUAGES

- **Italian – Native Speaker (CEFR C2)**
- **English – Professional working proficiency (CEFR B2)**
- **Spanish – Elementary (CEFR A2)**

ADDITIONAL INTERESTS & INFORMATION

Passionate about 3D printing and rapid prototyping, with a focus on robotics and embedded systems. I enjoy combining technical skills and creativity to transform ideas into functional solutions.

Further insights and additional projects are available in the Google Drive folder at the following link:

https://drive.google.com/drive/folders/1t3B8ecRMW14XozFeaQk9d8dj6CPdNR0p?usp=share_link