Eliot Abramo

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EDUCATION

Ecole Polytechnique Federal de Lausanne (EPFL) - *Lausanne, Switzerland* *2022 – 2025*

- Bachelors in Electrical and Electronic Engineering. Fully bilingual degree in English and French.

Jumeirah English Speaking School (JESS) - *Dubai, UAE* *2018 – 2022*

- International Baccalaureate (IB) Diploma, **43/45**.
- Completed thesis on "*How effective are Lagrange Polynomial and Fourier Series in modeling the spread of COVID-19 in the UK?*"

Imperial Global Summer School *2021*

- Attended introductory engineering lectures and masterclasses in month-long online course.

INTERNSHIPS and WORK EXPERIENCES

Embedded Systems Engineer, Data Handling for Space Payloads, Spacelocker – *Toulouse, France* *2025 – Present*

- Support development of embedded hardware and firmware for data-handling subsystems on CubeSats.
- Tasks include schematic design, PCB validation, and embedded programming in **C** and **Rust** for flight software.
- Hands-on R&D in a small technical team, engineering high-reliability space systems.

Research Assistant, Laboratory of Wave Engineering (LWE) – *Lausanne, Switzerland* *2024 – 2025*

- Completed bachelor thesis **"Non-linear activation functions for analog neurons in low-power deep-learning applications"** designing a tunable GHz metasurface that achieves a 180 ° phase-shift and an optical GELU emulator.
- Developed analog wave systems to function as low-power deep learning components.
- Utilized complex finite element simulation tools such as CST to create a meta-material to create a RF-based non-linearity system.

EPFL Xplore - *Lausanne, Switzerland*

Lead System Engineer – Head of Electronics & Embedded Systems *2024 – Present*

- Led the electronic and control systems design for a Martian-style rover, ensuring seamless subsystem integration in a multidisciplinary 120 people team.
- Led cross-functional teams to enhance embedded systems reliability through structured testing and validation cross-functional engineering teams to improve the reliability and performance of embedded systems.
- Engineered a CRC-validated SPI stack with Serial fallback in C++, using templated parsing, byte-stuffing, and ISR callbacks; achieved robust sensor communication under EM noise with low hardware coupling.

Embedded System Engineer – Team Member *2023 – 2024*

- Designed and programmed PCBs utilizing STM32 and ESP32 micro-controllers, with a focus on power efficiency and fault tolerance.
- Contributed to system debugging and optimization, gaining extensive experience in hardware in the loop testing.

Head of Communication, IEEE EPFL Student Branch – *Lausanne, Switzerland* *2023 – 2024*

- Manage all communications as well as organized various events such as the 2023 edition of the IEEExtreme hackathon.
- Led communication efforts to promote IEEE initiatives, managing social media channels and increasing student engagement by 30%.
- Developed technical content to communicate engineering concepts, fostering increased participation within the community.

Research Assistant, American University in Dubai – *Dubai, UAE* *2020 – 2022*

- Supported research projects for bachelor's degree students under Professor Vinod Pangracious.
- Studied blockchain and the IoT to prepare for a Dubai World Expo 2020 project.
- Supported AUD engineering students on micro-grid project in collaboration with the University of New Mexico.

Project Manager, Objective Science International (OSI) – *France* *2018 - 2019*

- Led a team of six students to develop an electronic data-gathering device for ecological research in Mexican caves, including sensor design and data analysis.
- Presented the project at the United Nations Geneva Forum, emphasizing the impact of engineering on environmental research.

COMPETITIONS AND ACTIVITIES

4x4 in Schools - *Dubai, UAE* *2020 – 2021*

- Designed a custom remote-controlled car, achieving a top 13 placement at the UAE National Finals.
- Won the Innovation Award for pioneering suspension dynamics and obstacle navigation design.

First Lego League (FLL) Robotics Competition - *Dubai, UAE* 2017 – 2020

- Awarded the Design and Innovation Award in 2020 among 250+ teams. Achieved top 10 placement out of 300+ teams.

SKILLS AND INTERESTS

Core: Rust, C, C++, Python (OpenCV, ROS, Gazebo), Git.
Additional: KiCad, VHDL, Assembly, Java, Julia, Fusion360.
Languages: Fluent English and French; conversational Spanish.