Roméo Maignal

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I am a bachelor student in Computer Science at EPFL. Previously, I've worked as a system engineer for a CubeSat mission within the EPFL Spacecraft Team. My interests include open-source softwares, systems engineering and low-level Programming.

Work Experience

EPFL Spacecraft Team ↗   Lausanne, Switzerland
System Engineer for the CHESS Mission   Sept 2023 - Febr 2025

- Contributed to the design review by writing Interface Control Documents for 4 different subsystems following ECSS standards.
- Defined system requirements for CubeSat data/power transmission and the payload's architecture, weight and dimensions.
- Conducted tests and simulations to verify the performance and reliability of the telecommunication components.
- Successfully troubleshoot and resolved technical issues that arose during the satellite's design review such as misplacement of crucial mechanical interfaces.

Education

École Polytechnique Fédérale de Lausanne   Lausanne, Switzerland
Bachelor in Computer Science   Sept 2022 - July 2026

- Relevant coursework : Computer Architecture, Computer Systems & Network, Intro to ML, Software Construction, Digital System Design, Object Oriented Programming, Data-Intensive Systems, Computer Language Processing

Lycée Français International Georges Pompidou   Dubai, UAE
Baccalauréat Général   Sept 2016 - June 2022

- Relevant coursework: Mathématiques, Physique-Chimie, Mathes Expertes

Notable Projects

Aircraft Flights Tracking Software ↗

- Developed a FlightRadar24-like software from scratch in Java over a period of four months. It involved various engineering fields (data transmission, aircraft data interfaces, ADS-B communication, aircraft location settings, cryptography).
- Tools used: Java, JavaFX, JUnit, JVM, IntelliJ, ADS-B Antenna

Autonomous 6-legged walking robot ↗

- Build, with a team of four, a small robot that can find and follow a person by listening to their voice and looking at them.
- Tools used: Raspberry Pi, Esp32, Python, OnShape, Prusa-Slicer

Scala Web App ↗

- Multiplayer web game application. It Implements a famous board game and use a client-server architecture to connect multiple players. I made use of scala state machines and json serialization/deserialization functions.
- Tools used: Scala, Metals, SBT

Interface Control Documents ↗

- ICDs for the telecommunication subsystems of a CubeSat. It involved learning the specific requirements for CubeSat development and adhering to ECSS standards to give the project good technical directives.
- Tools used: Overleaf, LaTeX, FusionCAD

Haystack Store File System ↗

- Scalable file system for large databases, inspired by Facebook's Haystack Storage system. It offers a cheap and higher performance solution to the user image storage space problem.
- Tools used: C, GCC

Competences

Computer Languages: C, Java, C++, Scala, Python, Javascript/Typescript, RISC-V Assembly, Verilog, VHDL, LaTeX

Tools: Git, Github, VSCode, IntelliJ, Overleaf, GTKWave, OnShape, Blender ; **Frameworks/Platforms:** React, Next.js, Node.js

Skills: Functional Programming, Object-Oriented Programming, Memory and Network Oriented Programming, Algorithms, Data Structures, Machine Learning, Low-Level Programming, Data-Base Management, Compiler & Interpreter Building

Languages: French (Native), English (C1 - IELTS ↗), Spanish (B1)

Non-Technical Work Experience

CSNB   Brive, France
Seasonal Boat Rental Manager   July 2020 - July 2023

- Summer job at a lake sports facility. Rented and repaired various boats. Led summer camp children in different activities.