Roméo Maignal

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I am a bachelor student in Computer Science at EPFL in Switzerland. 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, low-level programming and cyber-security.

Work Experience

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

- Contributed to the mission's PDR by writing the Interface Control Document 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 troubleshot 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 - June 2026

- Relevant courses : Computer Architecture, Computer Systems & Network, Intro to ML, Software Construction, Digital System Design, Object Oriented Programming, Theory of Computation, Data-Intensive Systems, Computer Language Processing, Human-Computer Interaction

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

Conway's Game-of-Life in RISC-V Assembly

- Implementation, on a GECKO board, of John Conway's famous Game of Life, in RISC-V assembly language.
- Tools used: RISC-V, GTKWave, MemoryView

Scala Web App

- Multiplayer web game application written in Scala. 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 big data, 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

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

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

Skills: Functional Programming, Object-Oriented Programming, Memory and Network Oriented Programming, Algorithms, Data Structures, Machine Learning

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.