

# 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 [↗](#)

System Engineer for the CHESS Mission

Lausanne, Switzerland

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 troubleshooted 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

Bachelor in Computer Science

Lausanne, Switzerland

Sept 2022 - June 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

Baccalauréat Général

Dubai, UAE

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

### 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. It implements a famous board game and uses 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

Seasonal Boat Rental Manager

Brive, France

July 2020 - July 2023

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