Roméo Maignal

github.com/maignal linkedin.com/in/romeo-maignal rmaignal@gmail.com +33 6 95 75 99 98

I am a Computer Science student at EPFL and a Research Assistant at the DATA Lab. I am particularly interested in leveraging functional programming paradigms within Rust to build robust systems such as Embedded Systems, OS development, WebAssembly, and high-performance CLI tools.

Work Experience

EPFL DATA Laboratory Lausanne, Switzerland
Research Assistant Febr 2026 - July 2026

- Implemented the interpretation of SPARQL for the superfluid database management system.
- Wrote a Parser that transformed queries into an interpretable Abstract Syntax Tree that I then mapped to a Datalog program.
- Optimized SPARQL-specific predicates throughout the DBMS pipeline.

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.
- 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 - July 2026

- Relevant coursework : Computer Architecture, Computer Systems & Network, ML, Software Construction, Digital System Design, OOP, Data-Intensive Systems, Computer Language Processing, Parallelism and Concurrency

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

- Built a small robot capable of locating and tracking a person within a room, using both sound recognition and computer vision.
- Tools used: Raspberry Pi, Esp32, Python, OnShape, Prusa-Slicer

Scala Web App

- Multiplayer web game application. It Implements a famous board game and uses a client-server architecture to connect multiple players. 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

Roguelike Java Game

- Roguelike desktop game built in Java.
- Tools used: Java, JavaFX, JUnit, IntelliJ

Competences

Computer Languages: Scala, Rust, C, Java, Python, Go, Javascript, RISC-V Assembly, Verilog, LaTeX

Tools: Git, Github, VSCode, IntelliJ, Overleaf, GTKWave, OnShape, Blender ;

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)