

# Résumé

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Birthday	██████████ in ██████████	Blog	blog.010.one

## Education

November 2020 - today  
**Technical University of Munich**  
Bachelor of Science in Informatics (expected completion 2024)

July 2016 - July 2020

**Gymnasium** ██████████  
Graduated with Abitur ██████████

September 2012 - July 2016

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## Language skills

- **German:** Native language
- **English:** B2+/C1
- **French:** B1+ (DELF)

## IT skills and abilities

- **Embedded development:** Basic experience with **STM32** microcontrollers using **C++** and **Rust**, close to hardware
- **Web development:** Good knowledge in **HTML**, **CSS**, **JavaScript/TypeScript**, **Vue** and **WebAssembly** with **Rust**
- **Go:** Very good knowledge (HTTP servers, bots and web scrapers)
- **App development:** Basic knowledge in Flutter for Android
- **Databases:** Basic experience with **SQLite** and **PostgreSQL**
- **Git:** Used in almost every project, often with Gitea or GitHub, there also experience with **CI/Actions**
- **Linux:** Experience with scripting, **Docker**, Raspberry Pi, Valgrind, GDB/rr, Strace and other typical tools
- Basic knowledge in **Rust**, **C**, **C++**, **Assembly (x86-64)**, **Java**, **Dart**, **C# (WPF)** and **Python**
- Effective research skills with search engines, Stack Overflow etc.
- **Office:** Word, Excel basics and PowerPoint

## Interests

Space exploration and rocket technology, cycling, medicine, programming, electronics

## Experience

**Amazon Web Services** Berlin, August – October 2023  
**Kernel & Operating Systems Engineer Intern (EC2)**  
As part of an EC2 team that builds the AWS Nitro System, the underlying platform for all modern EC2 instances, I built an internal performance data analysis tool.

**Technical University of Munich** May – September 2022  
**Tutor in the lab course on Computer Architecture**  
Responsibilities: holding two tutor sessions per week, grading projects and helping students learn C, x86-64 Assembly and optimization techniques (SIMD etc.).

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**Internship as a system integration specialist** ██████████

## Student Club Activities

May 2023 – today

**Scientific Workgroup for Rocketry and Spaceflight (WARR) Software Developer (MOVE)**  
I am actively involved in developing a bootloader for **STM32** microcontrollers in **Rust**, which enables **on-orbit firmware updates for upcoming satellites**. Work I've done includes writing parts of the bootloader, extensive testing and formal verification, and fixing bugs in the booted real-time operating system (based on RODOS).

## Projects

**ax – x86-64 Emulator for WebAssembly (Rust) – ax.010.one**

- Emulates execution of x86-64 instructions in the browser
- Can load and execute simple ELF binaries
- Emulation of a small number of Linux syscalls
- Extensive test suite supported by scripts for automatically finding test cases
- CI pipeline automatically publishes releases on NPM

**sensibleHub – Music server (Go) – GitHub**

- Web-based management of music files and tags
- Synchronization possible via built-in FTP server
- Docker multi-architecture build for x86-64, ARMv7 and ARM64

Further projects are presented on my website 010.one and on my GitHub account @xarantolus.

## Open-Source Contributions

- Mealie: Upload images for recipe steps from mobile devices #2025, duplicate recipes #1750 (Python, Vue)
- Owncast: Several pull requests for new frontend and backend features as well as improvements to the admin UI (Go, React)