Ayoub Garouat

Software Engineer

ayoub@ayga.dev | +971 545901743
Dubai, United Arab Emirates | Moroccan
ayga.dev | github.com/AYGA2K | linkedin.com/in/ayoub-garouat

Software engineer with a master's degree in Computer and Mobile Systems. I work mainly on backend development and API design, with a solid base in systems programming and networking. I build a lot of low-level tools from scratch because I like to understand how things really work, not just how to use them.

EXPERIENCE

Software Engineer Feb 2025 – Present
ALL-INKL.COM, Dubai, United Arab Emirates

- Worked on the company's new webmail platform, including the API that manages user accounts and fetches emails from the mail server over IMAP, and the web client that users see every day. Emails now load faster and the interface is easier to use.
- Helped build an HR management system that HR and staff now use daily to handle salaries, vacations, and sick leave in one place, instead of tracking each request by hand.

Intern Software Engineer Feb 2024 – Jul 2024
Aikyo, Casablanca, Morocco

- Built the API and back-office for a Sales Recording System (SRS) to meet Revenu Québec's tax rules. It handled invoicing and secure transaction records, and passed Revenu Québec certification.
- Worked on a trading backtesting platform for a London-based hedge fund. Fixed bugs and added new features to a system that ran large historical market data on AWS.
- Built API endpoints and connected the frontend for a transportation management system (TMS).

Intern Web Developer Apr 2022 – May 2022
Youpel, Tangier, Morocco

- Developed a website for a construction equipment company with separate admin and user sections, including equipment listing management and contact pages.

PROJECTS

Aylang AYGA2K/aylang
Interpreted, dynamically typed programming language built from scratch in C++23. Uses Pratt parsing, a tree-walking evaluator, and a mark and sweep garbage collector, and supports functions, recursion, while loops, arrays, and hash maps.

Microsql AYGA2K/microsql
SQL database engine written from scratch in C++23 with no external libraries. Has its own lexer, parser, and executor, supports CREATE, INSERT, SELECT with WHERE, UPDATE, and DELETE, and stores data in a custom binary format using 4 KB slotted pages.

DictaGo AYGA2K/dictago
Redis-like server written in Go. Supports strings, lists, and streams, commands like SET/GET,

LPUSH/RPUSH, and XADD/XRANGE, plus transactions (MULTI/EXEC), master-replica replication, and RDB persistence.

Text Editor AYGA2K/text-editor
Terminal text editor written in C++ with no external libraries. Runs in raw mode, draws directly to the terminal, and supports opening and saving files, line numbers, and incremental search that cycles through matches.

TCP to HTTP AYGA2K/tcp-to-http
HTTP server written in Go from scratch, using only the standard net package. Handles routing, dynamic paths (e.g. /user/:name), query parameters, POST bodies, custom headers, and keep-alive connections. Each connection runs in its own goroutine.

Wise AYGA2K/wise
Git-like version control system in TypeScript. Supports init, add, commit, status, and config, and implements Git's blob, tree, and commit objects with SHA-1 content hashing.

EDUCATION

Master's degree in Computer and Mobile Systems 2022 – 2024
Université Abdelmalek Essaâdi, Faculty of Sciences and Technologies, Tangier, Morocco

Bachelor's degree in Computer Engineering 2019 – 2022
Université Abdelmalek Essaâdi, Faculty of Sciences and Technologies, Tangier, Morocco

TECHNICAL SKILLS

Programming Languages: Golang, C++, TypeScript, JavaScript, PHP, Python, Shell Scripting

Frontend Frameworks: Angular, Vue.js, Nuxt.js

Databases: MySQL, PostgreSQL, MongoDB

Networking: TCP/IP, UDP, Socket Programming, DNS, HTTP

Operating Systems: Linux, Windows

Other Tools: Docker, Git, Cmake, Make

LANGUAGES

Arabic: Native
English: Advanced
French: Intermediate