

# Youssef Akhadad

## Junior Software Engineer

### PERSONAL INFORMATION

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**Portfolio:** www.akhadad.tech

### PROFILE

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Motivated developer shaped by the 1337 curriculum, with strong foundations in C/C++, system programming, and Linux. Enjoys solving complex problems and building things from the ground up. Aims to grow into a skilled software engineer, creating efficient, maintainable, and high-quality software.

### TECHNICAL SKILLS

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- **Languages:** C, C++, Python, JavaScript, TypeScript, HTML, CSS, Bash
- **Technologies:** Node.js, Nest.js, Prisma ORM, TypeORM, Swagger (OpenAPI), Nginx, Git, GitHub Actions, GitHub Pages, Vercel, Docker, Docker-compose, PostgreSQL, MariaDB, VSCode, Vim
- **Systems:** Linux, Windows
- **Concepts:** Object-Oriented Programming, Memory Management, Algorithms, Data Structures, RESTful APIs, Network Programming, Authentication & Authorization, JWT, RBAC, Database Design, Containerization, CI/CD, Shell Scripting

### PROJECTS

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#### Netpong — Real-time Web Application (NestJS, TypeScript, REST API, PostgreSQL, TypeORM)

Architected a full-stack single-page application featuring a real-time multiplayer Pong game, hosted at [www.netpong.games](http://www.netpong.games). Built with Nest.js, using Docker to containerize and link all services, ensuring seamless communication between the frontend, backend, and PostgreSQL database.

#### Venture API — Enterprise Task Management System (NestJS, TypeScript, PostgreSQL, Prisma ORM, JWT, RBAC, Swagger (OpenAPI))

Engineered a secure, RESTful task management backend featuring JWT authentication, strict Role-Based Access Control (RBAC), and interactive Swagger documentation.

#### Inception — System Administration with Docker (Docker, Docker Compose, Nginx, MariaDB, WordPress, Alpine/Debian Linux, Bash)

Virtualized a custom infrastructure using Docker and Docker-compose. Configured and orchestrated NGINX, WordPress, and MariaDB services in separate containers to deepen understanding of system administration.

#### Webserv — HTTP Server in C++ (C++98, POSIX Sockets, HTTP/1.1 Protocol, I/O Multiplexing, CGI)

Developing a fully functional HTTP server from scratch, handling requests, responses, CGI execution, and configuration parsing, while deepening understanding of networking and web protocols.

#### Minishell — Shell Implementation (C, Unix System Calls (fork, execve), IPC (Pipes), AST Parsing, Signal Handling)

Built a simplified Unix shell supporting pipes, redirections, and environment variables, reinforcing process management and system calls.

#### Philosophers — Multithreading and Synchronization (C, POSIX Threads (pthreads), Mutexes, Concurrency)

Implemented the classic dining philosophers problem using threads and mutexes, focusing on concurrency and deadlock prevention.

#### So\_long — 2D Game (C, MiniLibX, File I/O, Event Handling)

Created a small 2D game in C utilizing the MiniLibX graphic library, focusing on texture rendering, map parsing, and event handling.

#### Born2beroot — System Administration (Debian Linux, VirtualBox, LVM, Bash Scripting, System Security (UFW, AppArmor, SSH))

Configured a secure Debian virtual machine implementing LVM, strict password policies, UFW firewall, SSH, and a custom Bash monitoring script.

### EDUCATION

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<b>Mohammed VI Polytechnic University (UM6P) - 1337 Coding School   Benguerir</b> Software Engineering Student	2023 - Present
<b>Specialized Institute of Applied Technology (ISTA) Ben M'sik   Casablanca</b> Specialized Technician Diploma in Commerce	2021 - 2023
<b>Hassan II Faculty of Legal, Economic and Social Sciences Ain Sebaâ   Casablanca</b> Economics and Management Student	2020 - 2021
<b>Ibn Al Banna Al Mourrakochi High School   Casablanca</b> Baccalaureate in Life and Earth Sciences	2019 - 2020

### LANGUAGES

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- **English:** Proficient
- **French:** Basic
- **Arabic:** Native
- **Berber:** Native

### INTERESTS

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System programming, low-level programming, problem-solving challenges, backend development, DevOps.