

# Ismail Jaija

SOFTWARE ENGINEER · DEVOPS

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“Be the change that you want to see in the world.”

## Education

### UM6P - Université Mohammed VI Polytechnique

BACHELOR OF DIGITAL TECHNOLOGIES ARCHITECTURE

2025

### Ibn Rochd High School

HIGH SCHOOL DEGREE

2025

## Experience

### Web Server Implementation Project

09/2024

HTTP, TCP/IP, I/O MULTIPLEXING, TESTING

- Developed a fully functional HTTP server in C++98, handling multiple simultaneous connections.
- Implemented request parsing, response generation, and static file serving with support for HTTP methods.
- Configured dynamic settings via a custom configuration file, including port and host specifications.
- Enabled file uploads and directory listing using non-blocking I/O operations with a single polling mechanism.
- Integrated CGI support for executing scripts, enhancing server functionality.
- Added cookie support and session management features.
- Conducted extensive testing for HTTP/1.1 compliance and robustness.

### Web and Containerization Project

07/2024

REACT, FLASK, DOCKER, NGINX, REDIS, PROMETHEUS

- Designed and implemented a multi-container architecture using Docker, creating isolated environments for various services.
- Configured Nginx as a reverse proxy to enable efficient routing and load balancing for the WordPress application.
- Integrated Redis for caching to enhance performance and reduce response times.
- Implemented Prometheus and Grafana for robust monitoring and visualization of system metrics.
- Implemented and deployed two containers for the Volumes Backups Manager system: one for the backend (Flask) and the other for the frontend (React).

### Unix Shell Implementation Project

06/2024

C, UNIX, LEXICAL ANALYSIS, TOKENIZATION, ALGORITHMS

- Developed a lightweight shell that mimics Bash functionalities.
- Implemented efficient command parsing and execution, enabling features like AND (&&), OR (||), and pipes.
- Handled process creation and management using fork and exec system calls for executing external commands.
- Enabled redirection of input and output streams, allowing for command chaining and file manipulation.
- Managed environment variables, facilitating user configuration and shell behavior customization.
- Developed robust error handling to ensure stability and user-friendly feedback for invalid commands or inputs.

### Multithreading Programming Project

04/2024

C, SYNCHRONIZATION, THREAD SAFETY, RESOURCE MANAGEMENT

- Developed a solution to the classic dining philosophers problem.
- Implemented multithreading to simulate philosophers dining and thinking simultaneously.
- Designed algorithms to avoid deadlock scenarios, ensuring smooth execution.
- Utilized mutexes and semaphores to manage resource access among threads.

## Skills

Languages	C, C++, Python, Shell Scripting, PHP, PostgreSQL, MySQL
Technologies	Docker, Git/Github, Make/CMake, GCC/Debugging Tools, React/Flask/Django, REST APIs
Soft Skills	Fast Learning, Problem Solving, Critical Thinking, Leadership, Self-Starter