AYOUB ELMOUAFIK

Software Engineer | Backend Developer | AI Systems

elmouafikayoub23@gmail.com +212626880558 Sidi Bennour, Morocco ayoub elmouafik

Backend Software Engineer specializing in scalable backend systems, REST APIs, and AI-powered applications. Experienced in building production-ready software using Python, FastAPI, C++, Docker, and modern backend technologies, with a strong focus on performance, scalability, and clean software architecture.

EXPÉRIENCES PROFESSIONNELLES

- **MAY 2026 – PRESENT**

Collox.ma
remote, Morocco

SOFTWARE ENGINEER

- Co-founded Morocco's first verified student housing marketplace.
- Designed and developed the platform's backend architecture using Next.js.
- Built backend services powering user authentication, listing management, and verification workflows.
- Developed the administration backend for user management and listing moderation.
- Contributed to scaling the platform to more than 1,000 users within the first four months, demonstrating the ability to build production-ready software with measurable impact.

- **NOV 2022 – APR 2023**

Centrale Danone
hybride, Morocco

TRACEABILITY OPERATOR

- Managed production traceability records.
- Ensured accurate tracking of manufacturing batches and quality documentation.

MAJOR DEVELOPMENT PROJECTS

- **PYTHON • FASTAPI • LANGCHAIN • QDRANT • GEMINI**

AI RAG SYSTEM FOR ARTICLES

- Built an end-to-end Retrieval-Augmented Generation (RAG) system.
- Implemented semantic search using Gemini embeddings.
- Integrated Qdrant as a vector database for efficient document retrieval.
- Developed streaming REST APIs using FastAPI for AI-powered responses.

- **PYTHON • GEMINI • FASTAPI**

AI CONTENT MODERATION SYSTEM

- Developed an AI-powered moderation service.
- Classified content into toxic, hateful, spam, or safe categories.
- Returned structured JSON responses including labels, confidence scores, and reasoning.
- Exposed the system through scalable FastAPI endpoints.

- **DOCKER • DOCKER COMPOSE • NGINX**

CONTAINERIZED INFRASTRUCTURE (INCEPTION)

- Designed a complete containerized infrastructure from scratch.
- Built custom Docker images for each service.
- Configured secure NGINX with TLS.
- Implemented Docker Compose orchestration, private networking, persistent storage, and environment-based secrets management.

- **C++ • HTTP/1.1**

WEBSERV – CUSTOM HTTP SERVER

- Implemented a high-performance HTTP/1.1 server from scratch.
- Developed a non-blocking event-driven architecture.
- Implemented GET, POST, DELETE, CGI, file uploads, and chunked requests.
- Built an NGINX-inspired configuration system supporting virtual servers and advanced routing.

- **PYTHON • NUMPY • MATPLOTLIB**

MACHINE LEARNING – LINEAR REGRESSION

- Developed a complete linear regression model without ML frameworks.
- Implemented gradient descent and cost function optimization.
- Applied data normalization and prediction evaluation metrics.
- Visualized model performance using Matplotlib.

EDUCATION

- **OCTOBER 2023 – APRIL 2026**

University Mohammed VI Polytechnic (UM6P) – 1337 School

SOFTWARE ENGINEERING & COMPUTER SCIENCE (42 NETWORK)

- **2019 – 2022**

Chouaib Doukkali University – El Jadida

ASSOCIATE DEGREE IN PHYSICAL SCIENCES (SMP)

TECHNICAL SKILLS

- **Programming Languages:** Python, C, C++, JavaScript, TypeScript, SQL, Bash
- **Backend / DevOps:** FastAPI, Next.js, REST API Development, HTTP/1.1, API Design, Docker, Docker Compose, MongoDB, MySQL
- **AI/ML:** LangChain, Retrieval-Augmented Generation (RAG), Qdrant, Gemini API, Hugging Face, TensorFlow
- **Software Engineering:** Data Structures & Algorithms, Object-Oriented Programming, Git/GitHub, CI/CD