

Ahmed Amine Soualhi

Software Architecture Engineer



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PROJECTS

- **VISUAL AID – 3D Assembly Visualization & Production Management Platform (End-of-Studies Project, TCE / EMDEP)**

Designed and built a full-stack, containerized platform that ingests industrial STEP CAD files, automatically decomposes their assembly hierarchy, and delivers interactive 3D, barcode-driven, step-by-step guidance to shop-floor operators. Deployed in production at the EMTN (Morneg) facility.

- Backend: FastAPI (Python), OCP/CadQuery STEP-to-gLTF pipeline, MongoDB/GridFS, Motor async driver
- Auth: Spring Boot, Spring Security, JWT (access + refresh), role-based access control, MySQL
- Frontend: Angular 16, TypeScript, XeoKit WebGL 3D viewer, Chart.js analytics
- AI: On-premise LLMs via Ollama (Mistral, LLaVA), RAG with ChromaDB + nomic-embed-text
- Infrastructure: Docker, Docker Compose (10 services), custom DNS, health checks, Nginx
- Quality: SonarQube (35K LOC, Quality Gate passed, security rating A)
- Keywords: Industry 4.0, CAD processing, Microservices, On-prem AI/RAG, Production Analytics

- **SOFIMA – Industrial Maintenance Management System (Full Stack Developer)**

Developed and deployed a comprehensive maintenance management system for industrial operations with role-based access control and workflow automation. Successfully deployed to production on OVH VPS with complete infrastructure management.

- Backend: Spring Boot, Spring Security, JPA/Hibernate, JWT Authentication
- Frontend: Angular, TypeScript, SCSS, Responsive Design
- Security: Role-based authorization (ADMIN, MOULISTE, REGLEUR), JWT tokens
- Infrastructure: OVH VPS deployment, SSH server management, Docker containerization
- DevOps: Production deployment, Environment configuration, Domain management
- API: RESTful services with proper HTTP status codes and error handling
- Keywords: Cloud Deployment, VPS Management, SSH, Industrial IoT, Enterprise Security

- **BIAT – Legal Chatbot for Banking Sector (Solo Project)**

Developed a legal chatbot for BIAT bank using Machine Learning and Deep Learning. The project included data collection, cleaning, model building (NLP/Deep Learning), web application deployment, and production rollout. Enhanced customer support by automating legal inquiries.

- Technologies: Python, Web Scraping, NLP, Deep Learning, Cloud
- Keywords: Chatbot, NLP, AI, Automation

- **Maghrebba Assurance – Smart Insurance Management Platform (Team Lead)**
Led a team to build a modular, AI-powered insurance platform for Maghrebba Assurance. Features included contract and claims management, fraud detection, payment prediction, and customer feedback analysis.
 - Backend: Spring Boot, Spring Cloud; Frontend: Angular
 - Infrastructure: Docker, Eureka, API Gateway; Security: Keycloak
 - DevOps: GitHub Actions, Docker Hub; API: Swagger
 - AI/ML: Fraud detection, Payment prediction, Feedback classification
- **Project X – Micro Bank Credit Platform (Full Stack Developer)**
Contributed to the design and redevelopment of a mobile-first micro-banking platform offering credit, loan tracking, and user onboarding services. The platform was initially developed with Scala and Flutter, then fully rebuilt using .NET technologies for improved scalability and maintainability.
 - Backend: Scala (initial version), ASP.NET Core (final version), Entity Framework
 - Frontend: Flutter (mobile app); Admin Dashboard: MIUI-based ASP.NET Razor Pages
 - Architecture: REST APIs, modular service design
 - DevOps: Docker, GitHub CI/CD
 - Security: JWT Authentication, Role-based access control
 - API: Documented with Swagger for developer collaboration
 - Keywords: Microfinance, Credit Tracking, Scalable Architecture, Mobile Banking
- **Tourist in Tunisia**
SDL game in C, teamwork, dynamic allocation, pointer management, resource optimization, custom Arduino controller.
- **On-Air**
Radio station management app (C++), features: SMTP, SMS, dynamic statistics, database integration.
- **Doorstep**
E-commerce platform (JavaFX, Symfony) with delivery services, AI assistant for admin and clients.

PROFILE

Software architecture engineer specializing in distributed systems and microservices, with practical experience deploying scalable cloud solutions (AWS, GCP) and building CI/CD pipelines. Skilled at designing modular, resilient architectures, RESTful APIs, and deploying containerized applications using Docker and Kubernetes. I have led and contributed to projects and internships covering system design, development and production rollout. Seeking a role in software architecture to design and industrialize scalable, secure software systems.

SKILLS

- Project Management, Teamwork, Leadership, Time Management
- Effective Communication, Public Relations, Critical Thinking
- Programming Languages: C , C++ , Java , PHP , JavaScript , typescript
- Languages: Arabic (Native), French (Fluent), English (Fluent), German (Intermediate)

EDUCATION

- **ESPRIT: Ecole Sup Privée d'Ingénierie et de Technologies**
Prépas intégré / cycle ingénieur — Engineering Degree obtained
- **Baccalauréat Math-Tech**

WORK EXPERIENCE

- **Full Stack Developer (Freelance)**
Web development using Java, PHP, JavaScript.
- **Stage formation humain et sociable, Devolution**
- **Stage d'immersion en entreprise, BIAT**
- **Stage d'ingenieur , Sofima Filters**
- **End-of-Studies Internship (PFE), TCE / EMDEP**

CERTIFICATIONS

- **DevOps Essentials** — Google (Aug 2025). Cred ID: 17814957
- **Oracle Cloud Infrastructure 2025 Certified AI Foundations Associate** — Oracle (Aug 2025)
- **Google Cloud Computing Foundations** — Google (Jul 2025). Cred ID: 16925018
- **Implement CI/CD Pipelines on Google Cloud (Skill Badge)** — Google (Jul 2025)
- **Introduction to Containers, Kubernetes, and OpenShift** — Cognitive Class (Jun 2025). Cred ID: 6c2fe38db72c4e298e95b8d8492bbaa2
- **Machine Learning with Python** — Cognitive Class (Jun 2025). Cred ID: 65e36c83799b4ce28f429c44e1134744
- **Evaluation & Light Customization of Large Language Models** — NVIDIA (Jan 2025). Cred ID: M9kdR7yQQ5WiuvosdW_R4g
- **AWS Academy Graduate - Cloud Foundations** — Amazon Web Services (Novembre 2024)
- **Hashgraph Developer Course — Certificate of Completion** — The Hashgraph Association (17 Octobre 2025)

INTERESTS

Emerging technologies, AI, Cloud Computing, DevOps, Video Games, Technical Reading