

Mazen Temani

Applied AI & Full-Stack Engineer

📍 Nabeul, Tunisia ✉ tmanimazen@gmail.com ☎ +216 29 205 253 🌐 Portfolio Demo 🌐 mazen-temani
in temani-mazen

Objective

Applied AI & Full-Stack Engineer with an **MSc in Data Science** and a track record of delivering end-to-end intelligent systems across Web, Mobile, and IoT. Proven ability to take complete technical ownership in unguided environments—shipping production-grade **RAG pipelines**, **local LLM architectures**, **predictive ML models**, and **autonomous workflow agents**.

Experience

Altutux International,

Jun 2026 – Aug 2026

Applied AI & Automation Engineer

- Assumed 100% technical ownership to deliver **4 production-grade systems** within an unguided industrial setting, digitalizing floor operations, vehicle telemetry, and enterprise communications.
- **Textile ERP & Predictive AI**: Replaced legacy shared Excel sheets by engineering a role-based monorepo ERP (React 19, Express 5, Drizzle ORM, PostgreSQL) for 8 operators; embedded **XGBoost delay-risk prediction** and an offline-first **French RAG assistant** (ChromaDB + Ollama) streaming over SSE with PostgreSQL LISTEN/NOTIFY live synchronization.
- **IoT Fleet Telematics (FLOTTE)**: Digitalized operations for an active bus fleet via a cross-platform mobile app (Flutter, Riverpod, NestJS, Prisma); ingested Winnou GPS telemetry to automate maintenance (*vidange*) thresholds, Mapbox road-snapping, and Firebase push alerts.
- **Autonomous Workflow Agent**: Deployed an **n8n + Gemini LLM** automation watching IMAP inboxes and gating on live Tunisian holiday iCal calendars, autonomously delivering context-aware multilingual out-of-office replies (AR/FR/EN) with 0% work-day false positives.

TAIS NextGen (Non-Profit AI Community),

Jun 2025 – Present

Technical Lead & Platform Developer

- **SympactLab Collaborative Platform**: Architected a real-time multiplayer simulation engine for SympactAI Edition 2; built a server-authoritative **Finite State Machine (FSM)** with asymmetric clue distribution, WebSockets + React Query hybrid sync, and GCS presigned uploads for tamper-proof team submissions.
- **Type-Safe Web Infrastructure**: Deployed and maintained the official platform (tais-nextgen.org) and technical challenge portals using React 19, TypeScript, and AWS S3, enforcing contract-first schemas with Orval and Zod.
- **Technical Leadership**: Co-organized **SympactAI 2nd Edition**; designed competitive machine learning challenge tracks, delivered applied AI workshops, and mentored 40+ participants.

Smartlab, Faculty of Medicine of Monastir,

Feb 2024 – Dec 2024

AI Developer (Mobile & NLP)

- **Phyto Healthcare Platform**: Engineered a cross-platform clinical mobile app (Flutter, Django, PostgreSQL) connecting patients, physicians, and pharmacists for validated botanical pharmacology.
- Built a dual-purpose clinical chatbot powered by **RAG and domain-adapted embeddings**, resolving semantic ambiguity between colloquial patient symptom phrasing and medical plant pharmacology.
- Automated botanical literature extraction pipelines via web-scraping, dynamic PDF clinical report generation, and multi-user notification workflows.

Projects

FlowDocs – Modular Agentic Document Intelligence Platform

2025

FastAPI, React 19, TypeScript, ChromaDB, Ollama, PaddleOCR, PyMuPDF, Docker, Playwright

- Architected a 100% local, privacy-first document AI platform allowing users to compose OCR, parsing, RAG, and clustering pipelines via an interactive visual DAG workflow editor.
- Engineered a typed execution engine supporting **42 node types** with plugin auto-discovery, executed by a **Kahn-scheduling topological engine** using asynchronous parallel waves.
- Suppressed hallucinations by developing an ORCA-inspired **Critic Agent** cross-referencing generated assertions against vector-retrieved evidence chunks (≥ 0.75 cosine similarity) over 536+ indexed chunks.
- Integrated a 3-tier fallback OCR engine (PaddleOCR, Tesseract, EasyOCR), PyMuPDF PII redaction, and unsupervised TF-IDF/K-Means topic clustering with structured JSON/CSV exports.
- **SympactLab Multiplayer Mystery Platform** (React 19, Express 5, WebSockets, GCS) – Real-time collaborative deduction game engine featuring server-authoritative state synchronization, asymmetric clue routing, and encrypted evidence submissions.
- **Algorithmic Stock Trading System** (Deep RL / FinRL, PyTorch) – Trained deep reinforcement learning agents using FinRL with rolling-window optimization and pandas/NumPy pipelines, outperforming the Dow Jones Industrial Average buy-and-hold baseline in out-of-sample backtesting.
- **Car Damage Detection** (Computer Vision / PyTorch, Streamlit) – Built a damage assessment web application leveraging a fine-tuned ResNet50 model across 6 severity classes, achieving $\sim 80\%$ validation accuracy on multi-angle vehicle imagery.
- **Smart Dental Diagnosis (IEEE Competition – 3rd Place Award)** – NLP symptom diagnostic pipeline utilizing medical domain text processing, semantic embeddings, and multi-class machine learning classifiers.

Education

MSc in Data Science, Higher Institute of Computer Science and Mathematics of Monastir
Specialization: Advanced Machine Learning, Mathematical Modeling & Software Architecture

Sept 2022 – Dec 2024

BSc in Computer Science, Higher Institute of Computer Science and Mathematics of Monastir

Sept 2019 – June 2022

Technologies & Skills

AI & Machine Learning: Retrieval-Augmented Generation (RAG), Ollama, ChromaDB, Vector Embeddings, LangChain, Critic/Agentic Architecture, XGBoost, PyTorch, PaddleOCR, Prompt Engineering

Backend & Architecture: Python, FastAPI, Express 5, NestJS, Django, Node.js, RESTful APIs, OpenAPI 3.1, Event-Driven Architecture (SSE, Postgres LISTEN/NOTIFY, WebSockets), n8n (Automation)

Frontend, Mobile & Cloud: React 19, TypeScript, Flutter (Riverpod), PostgreSQL, Drizzle ORM, Prisma, Docker, GitHub Actions (CI/CD), AWS S3, Google Cloud Storage, MapLibre GL, Render

Certifications

- [Deep Learning: Beginner to Advanced – Codebasics](#) (Oct 2025)
- [AWS Academy Graduate – Cloud Foundations](#) (2024)

Languages

- **English** (Professional working)
- **French** (Full professional)
- **Arabic** (Native)