TOUATI FATMA ZOHRA

Full-Stack & AI Engineer · Data & Digital Transformation · Mining Sector

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LinkedIn · GitHub · Portfolio

PROFESSIONAL SUMMARY

Full-Stack & AI Engineer (M.Sc. in Software Engineering) at the National Agency for Mining Activities (ANAM), Ministry of Mines, building national-scale digital public services for Algeria's mining sector. Delivers end-to-end solutions: React / Node.js / PostgreSQL applications, REST APIs, administrative dashboards and production deployment. Integrates machine learning into working web applications through FastAPI, designs conversational AI for the mining sector, and complements this with data processing (Python, Pandas, SQL, ETL) and geospatial expertise (ArcGIS Pro). Motivated to contribute to data, AI and digital-transformation projects in large industrial and energy organisations.

CORE SKILLS

Full-Stack Development
React · Next.js · TypeScript · JavaScript · Node.js · Express · Prisma · Tailwind CSS · REST APIs

AI & Machine Learning
Python · scikit-learn · PyTorch · Keras · predictive modelling · deep learning · conversational AI · LLMs · RAG · model serving with FastAPI

Data & Databases
SQL · PostgreSQL · MySQL · MongoDB · Pandas · NumPy · ETL · data modelling · data cleaning

GIS & Geospatial
ArcGIS Pro · GIS · geographic information · mining-sector applications

Deployment & DevOps
Docker · Nginx · CI/CD · Git/GitHub · environment configuration · internal hosting

Business & Collaboration
Requirements analysis · regulatory-to-digital workflows · KPI reporting · Excel · cross-functional teamwork

PROFESSIONAL EXPERIENCE

Full-Stack & AI Engineer | **National Agency for Mining Activities (ANAM), Ministry of Mines** *Oct 2025 – Present*

Algiers, Algeria

- Build GUNAM, the National Mining One-Stop-Shop Portal: a centralized digital gateway digitalizing Algeria's mining administrative procedures.
- Translate business and regulatory requirements into structured digital workflows and applications, working with technical and business teams.
- Develop responsive interfaces, administrative dashboards and reusable UI components for application tracking, process monitoring and access to operational information.
- Contribute to data organization, data quality and information flows across internal applications and systems.
- Apply AI, data processing and geospatial technologies (ArcGIS Pro) to mining-sector use cases.
- Handle deployment, environment configuration, hosting and troubleshooting on internal infrastructure (Nginx, Docker).

Mathematics & Computer Science Teacher | **Ministry of National Education** *Sep 2025 – Oct 2025*

Blida, Algeria

- Taught mathematics and computer science, strengthening communication, planning and knowledge-transfer skills.

KEY MINING-SECTOR PROJECTS

National Mining Portal (GUNAM) & Mining Services External Portal | **ANAM · Ministry of Mines**

- Designed and developed features to collect information on mining operators and investors, track submitted applications and consult mining permits.
- Structured collected data to support consultation, monitoring and reuse; integrated digital services and data exchanges with internal systems.

  Tech: React · Node.js · PostgreSQL · REST APIs · data modelling · dashboards

SIGAM: Mining Activities Management Information System | **ANAM**

- Collect, inventory and structure data on mining activities and mining-title management; centralize data from multiple internal sources.

- Track applications, mining permits and administrative procedures; improve data quality, consistency and information exchange between systems.

  Tech: PostgreSQL · SQL · Excel · data modelling

ANAM Official Website (in development) | anam.gov.dz

- Develop and maintain the agency's institutional website end-to-end: React interface, Node.js backend, PostgreSQL database, with Nginx deployment.

  Tech: React · Vite · Node.js · Prisma · PostgreSQL · Nginx

Official Website of the Ministry of Mines and Mining Activities | Public sector · Algeria

- Contribute to the ministry's official website, applying web development to institutional communication and making the ministry's mission and the mining sector easier to discover.

  Tech: Web development · public-sector digital services

AI & PERSONAL PROJECTS

Mining AI Assistant: Domain-Specific Conversational AI | Mining sector

- Designing an AI chatbot dedicated to the mining sector that brings specialized knowledge into natural conversation, helping users explore the field, understand its terminology and ask questions in their own words.

  Tech: Conversational AI · mining knowledge access

Smartcrop-IA: Machine-Learning Crop Recommendation | Live demo · GitHub

- Built a prototype turning soil and climate data into crop recommendations: pretrained scikit-learn models served through a FastAPI backend with a web interface.

  Tech: Python · scikit-learn · FastAPI · applied machine learning

Full-Stack E-Commerce Platforms | NARI_Literie · THREAD · TechStore

- NARI_Literie: bedding boutique with product variants, persistent cart, delivery by wilaya, order tracking, stock management and a sales-analytics dashboard (React, Node.js, Express, PostgreSQL).
- THREAD: French-language T-shirt store with cash-on-delivery checkout and store management (React, Express, PostgreSQL, Prisma). TechStore: hardware storefront with cart and order administration (Node.js, Express, EJS, MySQL).

TRAINING & CERTIFICATION

- **ArcGIS Pro · Geographic Information Systems (GIS)** | GISMed, official Esri partner in Algeria: completed six ArcGIS Pro training courses.

EDUCATION

M.Sc. in Software Engineering | Saad Dahleb Blida University *2023 – 2025*

B.Sc. in Information Systems & Software Engineering | Saad Dahleb Blida University *2020 – 2023*

Undergraduate Studies, Information Systems & Software Engineering | USTHB, Algiers *2019 – 2020*

LANGUAGES

Arabic · French · English