

Aya Mekni

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Profile

Final-year Computer Science Engineering student (graduating in June 2026), specializing in **Data Science & Artificial Intelligence**. Experienced in building **end-to-end solutions**—from ETL pipelines and **feature engineering** to ML/DL training, evaluation, and deployment—using robust **MLOps** practices. Passionate about **Big Data** ecosystems and next-generation applications powered by **LLMs**, **Computer Vision**, and **AI Agents**. Seeking a **6-month mandatory internship in Europe** starting **January 2026** to contribute to a collaborative, fast-moving team.

Technical Skills

Programming Languages: Python, SQL, R, Java, PL/SQL
Databases & Data Tools: PostgreSQL, MySQL, MongoDB, Neo4j, Apache Hive
Data Engineering & Big Data: Apache Spark, Hadoop, Kafka, MapReduce, ETL/ELT Pipelines, Data Warehousing, Pandas, NumPy, Data Analysis
Machine Learning: scikit-learn, Random Forest, PCA, DQN, Model Evaluation, CRISP-DM, TDSP
Deep Learning: TensorFlow, PyTorch, Keras, CNNs, LSTMs
LLMs & AI Agents: Hugging Face Transformers, Llama, LlamaIndex, Embeddings, RAG, n8n, AI Development
Computer Vision: OpenCV, YOLO, Object Detection, Feature Extraction, Medical Imaging
Cloud Computing: AWS (EC2, S3, RDS, Lambda, Kinesis, IAM, Boto, Cloud Security, Cost Optimization), Azure
MLOps & DevOps: MLflow, Docker, Kubernetes, GitHub Actions, CI/CD Pipelines, Model Deployment
BI & Visualization: Power BI, Tableau, RStudio
Monitoring & Observability: Prometheus, Grafana, ELK Stack
Tools & Practices: **Version Control:** Git | **Project Management:** Jira | **IDE:** IntelliJ IDEA | **Agile:** Scrum

Experience

Data Science & AI Intern, CarthaPlay – Remote, Tunisia Jun 2025 – Aug 2025

- Analyzed **7,000+ gameplay logs** using **Python** and **Pandas** to identify student learning trends (**timestamps**, **error rates**, **response times**), delivering documented insights for stakeholders.
- Developed **hybrid models** for **activity recognition** and **anomaly detection** using **TensorFlow**, **PyTorch**, **LSTMs**, and **Transformers**, improving model performance.
- Built **scalable data pipelines** in **Python** for ingestion, cleaning, pattern detection, and aggregation.
- Created a **recommendation engine** with **RAG**, **LangChain**, **LLMs**, and a **Neo4j vector database**, achieving **75% matching accuracy** in delivering educational content.
- Integrated **explainable AI** (**confidence scores**, **rationales**) to enhance educator trust and transparency.
- Implemented a **teacher-facing chatbot** in **Python**, providing actionable student behavior insights.

Software Engineer Intern, Anypli – Monastir, Tunisia Jun 2024 – Aug 2024

- Developed **Eventify**, a responsive event management platform using **Laravel**, **Tailwind CSS**, and **Blade templates**.
- Implemented **Multi-Factor Authentication (MFA)** and **Role-based Authentication**, strengthening platform security in line with industry best practices.
- Built **real-time dashboards** and **live comment features** with **Laravel Broadcasting** and **WebSockets**, increasing user engagement by **25%**.
- Optimized **database performance** and CRUD operations with **Eloquent ORM**, reducing query response times.
- Collaborated in **Agile sprints**, contributing to **code reviews** and **technical documentation** to improve team efficiency.

Education

National Engineering Diploma in Computer Science Specialization: DataScience & AI ESPRIM — Monastir, Tunisia
Sep 2023 – Jun 2026
(expected)

- Relevant Coursework:** Machine Learning; Deep Learning; Big Data Analytics (**Apache Spark**, **Hadoop**); MLOps; Data Engineering; Natural Language Processing; Computer Vision.

Pre-Engineering Diploma (Preparatory Cycle — Math–Physics–Informatics) FSM — Monastir, Tunisia Sep 2021 – Jun 2023

- Relevant Coursework:** Calculus; Linear Algebra; **Probability & Statistics**; Data Structures; Algorithms; Python Programming; SQL; Big-O Complexity Analysis.

Projects

AfriOffres – Panafrican Tender Platform | Data Science & AI Contributor

- Built a **recommendation system** using **TF-IDF** and **embeddings**, achieving **90% matching accuracy** and improving performance by **20%**.
- Developed a **web scraping pipeline** with **Python**, **BeautifulSoup**, and **Selenium** to standardize tender data across 5 African countries.

Tech Stack: Python, Pandas, FastAPI, MongoDB, BeautifulSoup, Selenium, TF-IDF, RAG

Trash to Cash — AI-Powered Recycling Ecosystem | Data Science & AI Developer

- Developed a **CNN-based web app** with **EfficientNet**, achieving **92% accuracy** and improving classification by **15%**.
- Built an **autonomous robot** using **YOLOv5** and **Reinforcement Learning** for recycling detection and navigation.

Tech Stack: Python, TensorFlow, PyTorch, YOLOv5, Reinforcement Learning, Django REST, MongoDB

Lung Cancer Prediction — End-to-End MLOps Pipeline | MLOps Engineer

- Built an **SVM-based ML pipeline**, achieving **88% accuracy** and improving prediction by **10%**.
- Deployed via **CI/CD workflows** with **MLflow** and **Docker** for experiment tracking and production-ready performance.

Tech Stack: Python, Scikit-learn, MLflow, FastAPI, Docker, Pandas, NumPy

Speech Emotion Recognition — EMO-DB & RAVDESS | Deep Learning Developer

- Developed a **CNN-LSTM model** on **spectrograms**, achieving **85% weighted-F1 score** and **15% improvement** on EMO-DB and RAVDESS datasets.

Tech Stack: Python, TensorFlow, Keras, Librosa, Scikit-learn

Certifications

- **Fundamentals of Deep Learning**, NVIDIA, Mar 2025
- **Introduction to Transformer-Based Natural Language Processing**, NVIDIA, Aug 2025 (In Progress)
- **Generative AI with Diffusion Models**, NVIDIA, Jun 2025
- **Applications of AI for Predictive Maintenance**, NVIDIA, Apr 2025
- **Microsoft Certified: Azure AI Fundamentals (AI-900)**, KodeKloud, Feb 2025
- **DataCamp Professional Development Courses**, DataCamp, May–Aug 2025 (In Progress)
 - Introduction to MLflow
 - Retrieval Augmented Generation (RAG) with LangChain
 - Working with Llama 3
 - Introduction to Power BI
 - AWS Cloud Practitioner Track (AWS Concepts, Cloud Technology and Services, Security and Cost Management, Boto in Python, Streaming Data with Kinesis and Lambda)
- **Scrum Fundamentals Certified (SFC)**, Vabro.ai/VMedu, Apr 2024

Languages

- **Arabic:** Native proficiency
- **English:** C1 — Full professional proficiency
- **French:** C1 — Full professional proficiency
- **German:** A2 — Basic proficiency