Khaled Sid'El Vally

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EDUCATION

Engineering Student: Higher School of Statistics and Information Analysis, Tunis, Tunisia   2023 – 2026
Pre-Engineering Student: IPGEI, École Supérieure Polytechnique, Nouakchott, Mauritania   2021 – 2023

EXPERIENCE

AI Engineer Intern – Lynaat   Jul 2025 – Aug 2025

- Developed a **retrieval-augmented generation (RAG) chatbot** with a **Streamlit** interface for legal and administrative document search.
- Built and annotated datasets of queries and documents to analyze retrieval performance.
- Applied **statistical modeling** (logistic regression, chi-square tests, correlation analysis) to predict and classify retrieval errors (false positives / false negatives).
- Designed and executed **factorial experiments** to optimize document segmentation (chunk size, overlap, method).
- Delivered a predictive error model, chunking optimization recommendations, and a performance monitoring dashboard.
- **Skills:** Python, Machine Learning, BeautifulSoup, Streamlit, LangChain, FAISS, Scikit-learn, Git/GitHub.

Data Scientist Intern (Remote) – Technocolabs Softwares   Apr 2025 – May 2025

- Preprocessed data and engineered features for multiple ML projects.
- Trained and evaluated **supervised** and **unsupervised** models using Scikit-learn.
- Applied **model optimization** (tuning, cross-validation) to improve performance.
- Created visualizations with **Matplotlib** and **Seaborn** to communicate results.
- **Skills:** Python, Pandas, Scikit-learn, Machine Learning, Visualization, Git/GitHub.

Data Analyst Intern – Smart MS SA   Jul 2024 – Aug 2024

- Extracted and managed business data from **Odoo ERP**.
- Conducted **data cleaning** and **exploratory data analysis (EDA)** to support decision-making.
- Built interactive dashboards and reports in **Power BI** to monitor KPIs and visualize business processes.
- Contributed to business intelligence workflows, integrating SQL, Excel, and visualization tools.
- **Skills:** Odoo, Power BI, SQL, Excel, Data Cleaning, EDA, Business Intelligence.

TECHNICAL SKILLS

- **Programming Languages:** Python, Java, C, R, SQL
- **Machine Learning & AI:** Scikit-learn, PyTorch, TensorFlow, NLP, Computer Vision
- **Data Analysis & Visualization:** Pandas, NumPy, Matplotlib, Seaborn, Plotly, Power BI
- **Databases & Data Engineering:** MySQL, PostgreSQL, MongoDB, Web Scraping (BeautifulSoup, Selenium)
- **Web Development:** Django, Flask, FastAPI, React, Streamlit, HTML, CSS, JavaScript

PROJECTS

AI-Powered Medical Chatbot with RAG & User Management   Sep 2025 – Oct 2025

Developed and containerized a full-stack medical information assistant utilizing Retrieval-Augmented Generation (RAG) architecture with Python/FastAPI backend, ChromaDB vector database, and Google Gemini AI for accurate, context-aware health guidance.

- Engineered comprehensive user management system with secure JWT authentication, bcrypt password hashing, and persistent user profiles storing medical history, conditions, allergies, and medications for personalized responses
- Implemented conversation memory system with persistent storage, enabling multi-turn contextual dialogues with full session recall and conversation history management across sessions
- Built React/TypeScript frontend featuring real-time AI streaming via Server-Sent Events (SSE), dynamic conversation threading, user profile management, and seamless session persistence
- Containerized and deployed using Docker and Docker Compose for multi-container orchestration, ensuring scalability, reproducibility, and streamlined deployment with environment configuration and data persistence

AI-Powered Vehicle Monitoring System   Sep 2024 – Dec 2024

- Built real-time vehicle monitoring with YOLOv8 and EasyOCR to detect license plates and seatbelt usage.
- Deployed system on Flask web app, enabling automated video analysis.

LANGUAGES

French: B2
English: B2