

# Adam Derbel

## Full-stack AI Engineer

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### SUMMARY

Full-stack AI Engineer specializing in ML, LLM systems, and blockchain-based applications. Experienced in building end-to-end AI platforms, RAG chatbots, Chrome extensions, and privacy-first dApps. Focused on turning complex technical concepts into practical, secure, and impactful solutions. Looking for the next challenge in a journey of innovation, growth, and real-world impact.

### SKILLS

#### Programming & Databases

Python · SQL · NoSQL · REST APIs · ETL Pipelines

#### Deep Learning & NLP

PyTorch · TensorFlow · Hugging Face Transformers · NLP Pipelines

#### Web Development & Apps

React · TypeScript · FastAPI · Flask · Dash · Streamlit  
Laravel · ASP.NET Core

#### Data Acquisition & Scraping

BeautifulSoup · Requests · Web Scraping

#### Machine Learning & Data Science

Scikit-learn · Statsmodels · Pandas · NumPy · Feature Engineering

#### LLM & RAG Engineering

LangChain · FAISS · RAG Pipelines · Ollama LLM · LoRA/PEFT · Vector Databases

#### DevOps & Deployment

Docker · Git/GitHub · CI/CD · Hugging Face Hub

#### Methodologies

Agile · Scrum · Kanban

### PROJECTS

#### AI Web Guardian | [GitHub](#) · [Devpost](#)

*Google Chrome Built-in AI Challenge 2025*

Chrome MV3 security extension using on-device AI for real-time website risk analysis.

- Built security checks for SSL, domain impersonation, cookie banners, trackers, and redirect chains.
- Integrated Chrome's on-device Summarizer + LanguageDetector to generate local AI insights with zero data transmission.
- Designed clean popup and side-panel UIs ensuring a smooth user experience.

**Tech Stack:** React (Vite + TypeScript), Chrome MV3 APIs, On-device AI APIs, Node.js, RDAP, crt.sh

#### MedVault | [GitHub](#) · [Devpost](#)

*Midnight Hackathon 2025*

Privacy-preserving dApp for encrypted medical record ownership and selective sharing

- Integrated mocked Midnight SDK for encrypted data & permissions.
- Implemented smart-contract logic via Lace Wallet: doctors request specific fields, and patients approve access.
- Developed patient & doctor dashboards for uploads, access requests, notifications, and connections.

**Tech Stack:** React + TSX, Express.js, Node.js, Blockchain, E2E Encryptionn

#### Fake or Real: The Impostor Hunt | [Kaggle Competition](#)

*European Space Agency*

NLP pipeline to classify real vs fake text pairs using transformer models.

- Engineered a complete text-pair processing pipeline with augmentation and preprocessing.
- Fine-tuned DeBERTa-v3-large with custom metrics and early stopping.
- Applied margin-based rules for final predictions; achieved 0.8225 accuracy.

**Tech Stack:** Python, HuggingFace Transformers, PyTorch, Pandas, scikit-learn

#### AI Market Pulse Dashboard | [GitHub](#)

*Personal Project*

Modular AI-powered market analysis platform with automation and forecasting.

- Built full-stack automated pipelines for data ingestion, cleaning, and visualization.
- Integrated multiple forecasting models achieving ~0.97 average accuracy.
- Added OpenRouter AI (mistral-7b-instruct) for insights, commentary, and analysis.
- Integrated a personal RAG chatbot for instant AI-generated explanations.

**Tech Stack:** Python, Dash, Pandas, Plotly, SQLite, scikit-learn, OpenRouter AIs

#### AI-Powered RAG Chatbot | [GitHub](#)

*Personal Project*

RAG chatbot combining web scraping and vector search for source-backed answers.

- FastAPI backend with Ollama LLM + FAISS vector search for intelligent retrieval.
- Dual knowledge sources: scraped web content + JSON knowledge, with semantic search and source attribution.
- Session-based conversation management, persistent chat history, and context-aware prompting.

**Tech Stack:** Python, FastAPI, Ollama LLM, FAISS, LangChain

### PROFESSIONAL EXPERIENCE

#### Clinisys | Business Intelligence Intern

*Sfax, Tunisia | Feb 2024 – June 2024*

- Analyzed customer and sales datasets to support segmentation and forecasting.
- Built interactive BI dashboards improving KPI visibility for non-technical teams.
- Streamlined reporting workflows, enabling faster data-driven decisions.

#### Karry Group | Web Development Intern

*Sfax, Tunisia | June 2023 – Aug 2023*

- Developed a full-stack web application with integrated database workflows.
- Improved operational efficiency through automation and structured data handling.
- Delivered a production-ready system applying clean architecture and best practices.

### EDUCATION

#### Master in Computer Systems and Networks Development

*Higher Institute of Technological Studies · sfax, Tunisia | Sep 2024 – Present*

#### Bachelor of Science in Computer Science (Big Data)

*Higher Institute of Computer Science and Multimedia · sfax, Tunisia | Sep 2021 – June 2024*