

# Otmane El Bourki

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## EXPERIENCE

### AI Engineer Intern — Master's Final Year Internship

Jan 2024 – Jun 2024

Tetricks – AI-Driven Hospitality Solutions 🌐

Sidi Slimane, Morocco

- Designed and implemented a RAG-based chat application for processing guest inquiries, utilizing open-source LLMs. Enhanced RAG performance with hybrid search on the vector database and optimized deployment using GCP services, including Cloud Run.
- Developed pipeline using VLM, enabling automated description generation for hotel rooms with **99.9% uptime**. Serving the model using Ollama on a virtual machine, accessible via Flask API on Cloud Run.

### AI Engineer Intern — Summer Internship

Jun 2023 – Oct 2023

Tetricks – AI-Driven Hospitality Solutions 🌐

Sidi Slimane, Morocco

- Architected and deployed production-grade ML pipelines for request classification on GCP, achieving **47% reduction** in operational costs through automated workflow optimization and efficient resource utilization
- Implemented LLM optimization techniques including distillation and quantization, delivering **3X faster** inference times while maintaining model performance
- Engineered an intelligent email processing system using LangChain and custom LLMs, resulting in **60% improvement** in request processing accuracy against the baseline based on regex

### ML Engineer Intern — Bachelor's Final Year Internship

Feb 2022 – Jun 2022

Ibn Tofail CS Department – Research Institution 🌐

Kenitra, Morocco

- Led the development of an emotion recognition system using deep learning, achieving **85% accuracy** on FER2013 dataset, and implemented SOTA vision models reaching **90% average precision** through hyperparameter optimization
- Enhanced model robustness by **20%** through data augmentation techniques and regularization strategies (e.g., dropout). developed and deployed a desktop application to deliver the model in a user-friendly interface.

## FEATURED PROJECTS

### 🌐 End to End Kidney Disease Classification | AWS, MLflow, DVC, MLOps |

- Architected and deployed a simple medical diagnosis system that achieved **94% accuracy**, incorporated MLOps practices for automated testing, monitoring, and A/B testing, and established robust CI/CD pipelines using GitHub Actions for continuous model retraining and deployment with zero downtime.

### 🌐 AI-Powered Newsletter Automation Platform | CrewAI, Exa, LangChain, Streamlit |

- Designed and developed an automated newsletter system using CrewAI to manage AI research agents for fetching and summarizing the latest news, integrating Exa for advanced data aggregation, LangChain and ChatGPT for generating concise summaries, and a Streamlit-based GUI for seamless interaction and management.

### 🌐 Medical RAG Chatbot | RAG, Meditron 7B LLM, Qdrant, PubMedBERT, Chainlit |

- Developed a medical RAG-based question-answering (QA) application leveraging Meditron 7B LLM, Qdrant Vector Database, and PubMedBERT for accurate, real-time medical information retrieval. Integrated seamless interaction through the Chainlit interface and implemented scalable vector search for improved performance.
- Optimized the system's deployment and execution using Docker for containerization, with GPU support for efficient model utilization, and established a robust setup for continuous testing and monitoring.

## EDUCATION

### IT Architecture Expert — Database architecture and data (M2, RNCP39774)

Oct 2024 – Aug 2025

École 42 Paris 🌐

Paris, France

- Key focus: AI, Data Science, Microservices, System Design, Infrastructure as Code, and DevOps practices

### Master in Artificial Intelligence — (Bac + 5)

Oct 2022 – Aug 2024

Ibn Tofail University 🌐

Kenitra, Morocco

- Coursework: Advanced ML Algorithms, Computer Vision, Natural Language Processing, Image Processing

### Bachelor in Mathematics and Computer Science — (Bac + 3)

Sep 2018 – Jul 2022

Ibn Tofail University 🌐

Kenitra, Morocco

- Core studies in Data Structures, Algorithms, Linear Algebra, and Software Engineering

## SKILLS

**Artificial Intelligence & Machine Learning:** Machine Learning, Deep Learning, NLP, Computer Vision, Reinforcement Learning, Large Language Models, Prompt Engineering, RAG, Fine-tuning, Embeddings, PyTorch, TensorFlow, Hugging Face, LangChain, CrewAI, OpenCV

**Infrastructure & DevOps:** AWS (SageMaker), GCP (Vertex AI, Cloud Run), Docker, Kubernetes, Model Deployment, Model Monitoring (MLflow), Model Serving, A/B Testing

**Data & Dev:** Python, C++, Git/GitHub, REST APIs, FastAPI, SQL, Vector Databases (Qdrant, Chroma)

**Soft Skills:** Analytical thinking, Collaborative problem-solving, Adaptability, Continued learning

**Languages:** Arabic (Native — C2), English (Full Professional — C2), French (Professional — B2)

## CERTIFICATIONS

**Generative AI Winter School** — Ecole Centrale Casablanca 03/2024, **Practical Data Science** — AWS 04/2022, **ML in Python with scikit-learn** — Inria 07/2021, **Mathematics for Machine Learning** — ICL 04/2021, **Professional TensorFlow Developer Certificate** — Deep Learning Specialization — DeepLearning.AI 10/2020