

SAMI AGOURRAM

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EDUCATION

UM6P - College Of Computing

Computer Science Engineering Degree

Relevant Coursework: Linear Algebra, Probability & Statistics, Optimization, Robotics, Machine Learning, Numerical Analysis ...

Professional Scrum Developer Certification

Ben Guerir, Maroc

Graduation Date: Sept 2026

PROFESSIONAL EXPERIENCE

Citi Bank - Markets Quantitative Analysis

Mentee in the MQA mentorship program

United Kingdom (remote)

Sept 2025 – Present

- Deepened understanding of derivatives pricing by studying the derivation of the **Black-Scholes PDE** and its application to valuing European call options under the guidance of senior quants.
- Explored numerical methods in finance, specifically analyzing **Monte Carlo simulations** and various **finite difference schemes** for solving Partial Differential Equations (PDEs) in option pricing contexts.

IRIF – Université Paris Cité

Paris, France

Research Intern – Program Verification

Jun 2025 - Aug 2025

Supervisor: Prof. Ahmed Bouajjani.

- Proposed a **novel diagramization** variant for array properties with aggregation functions.
- Extended the **ICE** framework to support this enhancement and proved the **soundness and completeness theorems** for the proposed approach, with the results currently being prepared for **academic publication**.
- Contributed to the development of **TAPIS** an open-source tool for program verification written in C++ .

Orange

Casablanca, Morocco

ML Intern

Jun 2024 - Aug 2024

- Utilized **PowerBI**, **Python**, and **TensorFlow** to analyze data and develop machine learning models for user device prediction, resulting in a **5%** increase in accuracy compared to previous models.
- Implemented rolling window validation and time-series cross-validation to counteract model drift, ensuring a consistent performance across seasonal variations, achieving a $\leq 7\%$ drop in accuracy between different periods.

PROJECT EXPERIENCE

Intidar - An AI powered healthcare PMS

- Designed a secure, scalable healthcare PMS using **React**, **TypeScript**, and **Supabase**, following a service architecture.
- Built an intelligent wait-time prediction system that combines **Machine Learning** with business logic to accurately forecast delays and improve patient satisfaction.
- Developed a Generative AI assistant using the **CUGA framework** that allows patients to book appointments via natural language conversations.

SkyPilot AI - Generative Co-Pilot for Pre-Flight Planning

- Built SkyPilot AI, a Generative AI assistant for pilots delivering **pre-flight briefings and aeronautical knowledge** through natural conversation
- Designed a retrieval-augmented generation (**RAG**) system and orchestrated a **multi-tool AI agent** using **LangChain** and **Llama-4**, enabling transparent and context-aware reasoning.
- Fine-tuned the model with **LoRA** to improve accuracy and adaptability to aviation-specific queries.
- Optimized performance by adding a **Redis**-based caching layer, cutting redundant model calls and latency.

LANGUAGES

French : Bilingual (TCF - C2)

English : Fluent (TOEIC - Cl)

Spanish : Beginner

Arabic : Native

TECHNICAL SKILLS

Programming Languages : Python, Go, C++, C, Java, SQL, TypeScript, R.

Tools : LLMs, MongoDB, Tensorflow, SAP, Scikit-learn

Cloud Tech : Kafka, GCP, Kubernetes, Hadoop, MLOps.