Ibrahim Krayem

GENERATIVE AI ENGINEER | LLM, RAG, AGENTS | PhD IN COMPUTER SCIENCE

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PROFILE

Generative AI engineer with a PhD in Computer Science (University of Rennes) and an engineering degree (ENSTA Bretagne). 6+ years in R&D and engineering, including 2 years at TALAN on Bpifrance missions: a conversational financial agent (LangGraph, Claude, MCP), plus document extraction and semantic search in production. My research background brings rigorous modelling and evaluation to traceable, observable AI systems.

EXPERIENCE

Experienced Generative AI Developer
Oct 2024 — Present

TALAN | Paris, France

- **SVI** (Bpifrance) — generative AI developer in an agile team of six: conversational financial agent built with LangGraph and Claude, managing conversation history and context; production release coming soon.
- Connect the agent to financial data through an MCP server and build its tools: SWOT analysis with PowerPoint export, data visualisations, financial document analysis (including capitalisation tables).
- Benchmarked open-source models (Qwen) against Claude models for document extraction with Docling; integrated real-time SSE streaming in the Angular frontend.
- **PICXEL** (Bpifrance, SAFe organisation of ~50 developers) — built a document analysis tool that extracts key information by document type (signatures, dates, SIREN/SIRET checks…), in production.
- Rebuilt the PICXEL search bar as embedding-based semantic search instead of strict matching, in production.
- Other TALAN projects: RAG systems (retrieval part) and vector search with FAISS.

Research & Development Engineer
Oct 2023 — May 2024

IRISA | TARAN | Lannion, France

- Developed a method that speeds up network-on-chip performance analysis by windowing real application traces (window splitting and merging, Poisson modelling).
- Improved the accuracy of performance forecasts while reducing computational complexity, validated across several traffic types.
- Implemented the trace processing pipeline in Python (Pandas, SciPy).

Doctoral Researcher
Oct 2020 — Sep 2023

IRISA | TARAN | Lannion, France

- Thesis: “Methods for fast exploration of manycore architectures based network-on-chip with emerging technologies” (University of Rennes, defended February 2024).
- Designed a queueing-theory model that evaluates the latency of hybrid electrical and wireless networks on chip: up to 500× faster than the cycle-accurate Noxim simulator, with an error below 5%.
- Presented the research at national and international conferences.

TEACHING

Lecturer — Networks & Virtualisation
Since 2026

UPEC | EPISEN | Paris, France

- Delivering lectures, tutorials and practical sessions in networks and virtualisation (VMware vSphere).

Lecturer — Microcontrollers
2022 — 2024

ENSSAT | University of Rennes | Lannion, France

- Delivered tutorials and practical sessions in microcontrollers and supervised an interfacing project.

PERSONAL PROJECTS

- **Aqarih** (aqarih.com) — bilingual real-estate platform with an AI search assistant.
- **CalAL** (calal.ikrayem.com) — Android and web app for aluminium workshops: calculations, panel cutting, stock and invoices; in production.
- **NewsAI** — Arabic news digests written by LLMs and published on Telegram and WhatsApp.
- **Personal server** — self-hosted Ubuntu server running CalAL, NewsAI and this portfolio: Caddy, PostgreSQL, scripted deployments, encrypted backups.

SKILLS

GENERATIVE AI
LLMs | RAG | LLM agents
MCP | tool calling
Claude | OpenAI API | Qwen
LangGraph | LangChain
Observability: Langfuse
Embeddings | Milvus | FAISS
Document extraction: Docling

SOFTWARE ENGINEERING
Python
TypeScript | React | Next.js
Angular | Java
REST APIs | SSE
PostgreSQL | MongoDB | SQL

CLOUD & DELIVERY
Azure | AWS | Vercel
CI/CD | Jenkins
Datadog
Git | GitHub | GitLab
Agile | Scrum

RESEARCH
Performance modelling
Queueing theory
Pandas | SciPy
Scientific writing & teaching

EDUCATION

Feb 2024
PhD in Computer Science
University of Rennes

Sep 2020
Engineering degree in Computer Science & Telecommunications
ENSTA Bretagne

Aug 2017
Bachelor's degree in Computer Networks & Telecommunications Engineering
Lebanese University | Faculty of Technology

CERTIFICATIONS

Microsoft Azure AI-900
Professional Scrum Master I
GitHub Copilot Certification

LANGUAGES

French	Fluent
English	Professional
Arabic	Native

ENGAGEMENTS

IEEE member
Order of Engineers - Lebanon
Volunteer with the French Red Cross