

Mohamed Nejjar

Computer Science Student
AI & Data Analytics

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Education

- 2026–present **Master's degree**, *Technical University of Munich, Computer Science*
Majoring in Machine Learning, with a minor in Software Engineering
- 2021–2025 **Bachelor's degree**, *Technical University of Munich, Computer Science*
- 2019 **Test of English for International Communication (TOEIC)**, *ETS, Rabat, Morocco, 945/990*
- 2017–2020 **High School Diploma**, *Al Jabr School, Bordeaux, France, 1.0*

Experience

- 11/2025–present **Boston Consulting Group (BCG Platinion)**, *Working Student AI & Data Analytics*, on-site
 - Designed and evaluated agentic AI architectures for enterprise energy use cases, focusing on tool-using agents, orchestration, and governance constraints.
 - Supported feasibility assessments of multi-agent GenAI systems with respect to scalability, cost, controllability, and compliance in enterprise environments.
 - Delivered an AI-powered contract digitization system based on agentic document analysis and RAG based retrieval, enabling role-specific reasoning over LNG contracts.
- 10/2024–11/2025 **Allianz SE**, *Working Student AI/ML*, hybrid
 - Developed GenAI applications to optimize information workflows and decision-making, including customer communication analysis, medical report insights, and insurance evaluations.
 - Designed and implemented agentic workflows, conducting cost-benefit analyses of models and cloud providers to ensure scalable and financially efficient AI solutions.
 - Presented workflow solutions and a prompt engineering framework in stakeholder workshops, driving adoption, improving productivity, and making advanced AI tools accessible to non-technical users.
- 03/2024–07/2024 **Fraunhofer Society**, *Internship in Generative AI*, hybrid
 - Built a private Retrieval-Augmented Generation (RAG) pipeline using Fraunhofer's public data to improve AI response accuracy and knowledge accessibility.
 - Led improvements in data ingestion and cleaning, retrieval processes, and guardrail design, while applying prompt engineering techniques to enforce rules, reduce hallucinations, and strengthen robustness against prompt attacks, ensuring reliable and secure AI-powered knowledge management.

10/2023–
01/2024 **LLMs for Science: Usage for Code Generation and Data Analysis**, *Research paper on Large Language Models*

Co-authored a peer-reviewed paper on the use of LLMs in research and data analysis, published in JSEP. This work has been cited over 130 times (35+ on Scopus), contributing to the academic discourse on AI adoption and serving as a foundation for training material in AI-driven research.

Projects

2026 **Quetzal: Knowledge Asset Extraction and Automated Assessment System for Educational AI**, *Personal Project*

- Built a production-grade agentic AI system for document-grounded tutoring, quizzes, and exams.
- Designed a parallel knowledge extraction pipeline with scoring, deduplication, and difficulty calibration.
- Implemented reliability guardrails: grounding, supervision, structured outputs, OCR-based grading.

08/2025–
12/2025 **Bachelor's Thesis: Mitigating Hallucinations in Large Language Models**, *Technical University of Munich, School of Software Engineering and AI*

- Proposed a novel shift-left approach to LLM hallucination mitigation by analyzing and refining user prompts prior to generation.
- Introduced a novel research contribution consisting of a user-sided hallucination taxonomy (Prompt Risk vs Meta Risk) and a quantitative Prompt Risk Density (PRD) metric with deterministic scoring.
- Implemented a multi-agent refinement pipeline for prompt analysis, iterative mitigation, and audit-ready outputs in high-stakes settings.
-  [MoNejjar/echo-hallucination-detect](#)

2025 **Hiro : AI-Powered Career Enhancement Platform**, *Personal project*

- Built a GenAI-driven full-stack system that automatically adapts CVs, cover letters, and interview preparation to specific job contexts using structured prompts and workflow automation.
- Implemented ATS-optimized document generation (keyword alignment, formatting compliance) with seamless export to recruiter-ready formats (PDF, LaTeX).

IT Skills

Programming Languages & Systems

- Python Backend systems, FastAPI, LLM orchestration, evaluation pipelines.
- TypeScript Full-stack development, API design.
- SQL PostgreSQL, Supabase, SQLite
- Java / C Data structures, algorithms, systems programming.

AI Frameworks, Data & Cloud

- AI Frameworks RAG, MCP, LangChain, Bedrock Flows, n8n, Flowise.
- Agentic Systems Multi-agent architectures , orchestration, tool use, coordination.

LLM Reliability Grounding, hallucination mitigation, guardrails, structured outputs, human-in-the-loop validation.

Cloud AWS (Bedrock, SageMaker), Microsoft Azure.

Software Architecture & Delivery

DevOps Docker, CI/CD (Jenkins), Vercel, Railway, GitHub Actions.

Collaboration Agile/Scrum, Jira, Confluence.

Language Skills

English Fluent

German Fluent

French Native Speaker

Arabic Native Speaker

Spanish Basic Knowledge

References

- [1] LLMs for Science: Usage for Code Generation and Data Analysis. *Mohamed Nejjar, Luca Zacharias, Fabian Stiehle, Ingo Weber.* Wiley, Journal of Software: Evolution and Process, 2024. Link : <https://onlinelibrary.wiley.com/doi/full/10.1002/smr.2723>.

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