

Mohamed Nejjar

* August 5, 2002, Casablanca

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, minoring in Software Engineering and Robotics
- 2021–2025 **Bachelor's degree**, *Technical University of Munich, Computer Science*
- 2019 **Test of English for International Communication (TOEIC)**, *ETS, Highest Merit*
- 2017–2020 **High School Diploma**, *Al Jabr School, Bordeaux, France, 1.0*

Experience

- 11/2025–
present **Boston Consulting Group (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.
- 04/2026– **SAP**, *Intern in AI Research & Engineering*, on-site
- 07/2026
- Led architecture and product ownership for an orchestrator-free multi-agent system, managing delivery across a team of 8.
 - Designed a decentralized agentic architecture where agents self-select into tasks via capability- and trust-weighted bidding, with no central controller.
 - Defined the blackboard protocol and tool suite that gates consensus behind a citation threshold instead of a single decision-maker.
 - Built an interactive canvas for configuring, running, and replaying live agent swarm simulations in real time.
 -  Agentic Self-Organization
- 10/2024– **Allianz SE**, *Working Student AI/ML*, hybrid
- 11/2025
- 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 AI workflows and prompt engineering solutions to stakeholders, driving adoption.

- 03/2024– **Fraunhofer Society, Internship in Generative AI**, hybrid
07/2024 - 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.

Publications

- 10/2023– **LLMs for Science: Usage for Code Generation and Data Analysis**, *Research paper on Large Language Models*
01/2024 Co-authored a peer-reviewed paper on the use of LLMs in research and data analysis, published in JSEP and part of the Wiley Online Library. (200+ citations including 70+ on Scopus)

Projects

- 2026–present **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.
- 10/2025– **AI-Powered Academic Recognition & Planning Assistant**, *Project Lead*
03/2026 - Led a team of 6 building a tool to automate academic credential recognition for international students, a persistent bottleneck for TUM's admissions process.
- Conducted stakeholder interviews with TUM's Lead of Admissions & Program Administration to scope requirements and validate the solution.
- 08/2025– **Bachelor's Thesis: Mitigating Hallucinations in Large Language Models**, *Technical University of Munich, School of Software Engineering and AI*
12/2025 - 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
- grade : 1.3

Extracurricular & Community

- 2026–present **Atlas Munich**, *Core Contributor, Student Initiative*
Ongoing contributor to a platform helping Moroccan students navigate relocation and studies in Germany, covering both AI-oriented features and broader platform development.

IT Skills

Programming Languages & Systems

Backend Python, Java, C, C++, SystemC, OCaml, SQL (PostgreSQL, Supabase, SQLite),
Engineering FastAPI, Spring Boot, Node.js, REST APIs, Microservices, Vector Databases.

Frontend TypeScript, JavaScript, Next.js, React, Tailwind CSS, Responsive UI Systems,
Engineering Accessibility (WCAG), Radix UI, Data Visualization

AI Frameworks, Data & Cloud

AI RAG, MCP, LangChain, Bedrock Flows, n8n, Flowise, Claude Agent SDK, Prompt
Frameworks Engineering.

Agentic Multi-agent architectures , orchestration, tool use, coordination.
Systems

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