

MOHAMMED AMINE GOMEZ MELERO

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OBJECTIVE

Final-year Computer Engineering student specializing in Artificial Intelligence, Optimization, and Algorithmics. Passionate about software development and intelligent systems. Currently seeking a full-time position to leverage my background in machine learning and data science to solve complex technical challenges and build robust applications.

EDUCATION

Master's in Computer Engineering - Computational Intelligence École Polytechnique de Bruxelles, ULB	September 2025 - June 2027
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Bachelor's in Civil Engineering École Polytechnique de Bruxelles, ULB	September 2022 - June 2025
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SKILLS

Languages	Python, Java, Kotlin, C, C++, SQL, Bash, TypeScript
Frameworks & Web	PyTorch, Scikit-Learn, React, Next.js, Streamlit, Numpy, Panda
Tools & Systems	Linux, Git, Docker, IntelliJ IDEA, VS code, Ollama
Core Concepts	Machine Learning, NLP, Combinatorial Optimization, Object-Oriented Design, MVC
Spoken Languages	French (Native), Arabic (Native), English (C1)

EXPERIENCE

Royal Meteorological Institute of Belgium <i>Engineering Intern (SO-LAR team)</i>	August 2026 - October 2026 <i>Brussels, Belgium</i>
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- Developed a numerical simulation model for an optical test bench.
- Implemented and tuned a PID thermal regulation system to ensure testing accuracy.

PROJECTS

CardioPredict: Cardiovascular Disease Classification

Machine Learning, PyTorch, Streamlit

- Developed a diagnostic ML pipeline to predict cardiovascular disease using patient data.
- Benchmarked Neural Networks, Decision Trees, and Bayesian Networks to evaluate clinical trade-offs.
- Deployed the predictive system as an interactive web application.

LLM Hallucination Detection (FACTScore)

NLP, LLMs, Python

- Conducted a reproduction study to assess factual precision in long-form generation of local LLMs.
- Implemented a pipeline extracting atomic facts to validate AI text against reliable sources.
- Evaluated modern architectures including Phi-4 mini, Gemma 3, and Llama 3.2.

MIMO NARX Dynamic System Modeling

Python, Scikit-Learn, PyTorch

- Designed an ML pipeline to identify complex discrete-time dynamic systems from time-series data.
- Mitigated error divergence in multi-step-ahead predictions over long horizons.