Ouail El Maadi

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Profile

Dedicated senior computer science student at Al Akhawayn University with a solid background in artificial intelligence, high-performance computing, and Software Engineering. Successfully completed research projects and internships in both academic and applied settings, developing strong analytical, leadership, and technical skills. Passionate team player and effective collaborator, with a strong drive to explore emerging technologies and address real-world challenges through data-driven solutions. I am eager to pursue a graduate degree in Computer Science to deepen my academic knowledge and contribute to research that blends artificial intelligence and scientific innovation with real-world impact.

Education

Al Akhawayn University (ABET Accredited) | Ifrane, Morocco
Bachelor of Science in Computer Science (Minor in Business Administration) | December 2025
Honors Programs:
Dean's List (Fall 2023, Fall 2024, Spring 2025)

Technical University of Ostrava | Ostrava, Czech Republic
Exchange semester | February 2024 - July 2024

SKILLS

Python, C, C#, Java, TensorFlow, Hugging Face, Spark, Kafka, ReactJS, Flask, HTML, CSS, Tailwind CSS, JavaScript, PostgreSQL, Node.js, MongoDB, SQL Server, SSRS, SSMS, ASP.NET Core, Google Data Studio, Agile Methods, problem solving, teamwork, leadership.

Relevant Courses

- **Applied Research**
- **Artificial Intelligence (Machine Learning, Neural Networks)**
- **Probability & Statistics**
- **Linear Algebra**
- **Calculus**
- **Data Structures**
- **Software Engineering**
- **Object-Oriented Programming**
- **Computer Programming**
- **Advanced Distributed Programming Paradigms**
- **Computer Organization & Architecture**

Publications/Research Projects

Energy-Efficient HPC Computation with OpenMP and Scheduling Strategies
Co-author **(Publication in Work)**

Research Project Summary:

- Explore how loop scheduling strategies (static, dynamic, guided) and thread parameters affect energy and performance in HPC.
- Evaluate time to solution and energy to solution using matrix vector computation as a case study.
- Propose machine learning models to predict optimal scheduling configurations for energy efficient execution.

AQUAIR: A High-Resolution Indoor Environmental Quality Dataset for Smart Aquaculture Monitoring
Co-author
Sabiri, Y., Houmaidi, W., Maadi, O. E., & Chtouki, Y. (2025). *AQUAIR: A High-Resolution Indoor Environmental Quality Dataset for Smart Aquaculture Monitoring*.

Research Project Summary:

- Contributed to the design and development of a high-resolution dataset for environmental monitoring in smart aquaculture settings.
- Applied AI and machine learning models (using TensorFlow) to analyze sensor data for predicting and optimizing indoor ecological parameters.
- Focused on data preprocessing, model development, and intelligent system integration to support decision-making in fish farming environments.

Professional Experience

Teaching Assistant – Artificial Intelligence & Software Engineering | *Spring 2025 – Present*
Al Akhawayn University | Ifrane, Morocco

- Assisted in labs and grading AI and Software Engineering courses.
- Assisted students with coding, debugging, and project development.
- Prepared lecture slides and learning materials

AI & Full-Stack Software Engineer Intern | February 2025 – September 2025
INTELLCAP | Morocco

- Contribute to the development of a healthcare web application for brain tumor analysis and visualization using Flask, FastAPI, and React.
- Integrate AI models for DICOM-to-NIfTI conversion, slice-based MRI visualization, and tumor prediction from medical scans.
- Build interactive dashboards and patient management features (CRUD) to enhance clinical workflow and data accessibility.
- Design user interfaces for uploading and displaying 3D brain images, supporting slice-level exploration and interpretation.

Developer & Researcher | September 2024 – Present
HPC MOROCCO | Morocco

- Develop the Morocco HPC Platform (React, Tailwind CSS, JavaScript) to host and centralize HPC webinars and scientific content.
- Contribute to the research team by organizing webinars with top-tier HPC experts to explore optimization strategies and emerging challenges in high-performance computing.

Software Engineer Intern | July 2024 – August 2024
Ministry of Agriculture | Morocco

- Developed and integrated dynamic reports with SSRS and SSMS into an ASP.NET Core application to optimize data analysis and visualization.
- Implemented secure and scalable backend architecture with SQL Server, adhering to the MVC model.

Software Engineer Intern | June 2023 – August 2023
Lafarge Holcim | Morocco

- Developed modern, responsive user interfaces with HTML, CSS, JavaScript, and React JS.
- Integrated PostgreSQL for managing data related to products, services, and customer interactions.
- Set up an interactive catalog, customer portal, and order tracking system to optimize the user experience.

Data Analyst Intern | December 2022 – January 2023
Veolia | Morocco

- Designed interactive reports and dashboards with Google Data Studio for data visualization and analysis.
- Integrated data from databases and spreadsheets to optimize reporting and decision-making.
- Developed dynamic metrics and filters, enabling users to interact with and customize their data analysis.

Academic Projects

Wildfire Alert Web Application (Ghabaty, Ifrane) | September 2024 – January 2025

- Led the development of Ghabaty as a scrum master, a wildfire warning system, ensuring team coordination and iterative progression.
- Developed the user interface with HTML, Tailwind CSS, and React.js, ensuring a smooth and responsive experience.
- Implemented predictive analytics based on weather data and historical fire patterns to generate real-time alerts.

Travel Agency Web Application (O-TAYS RABAT) | September 2023 – December 2023

- Developed an engaging and easy-to-navigate user interface with HTML, CSS, and JavaScript, providing exceptional user experience (UX).
- Created interactive maps, intuitive drop-down travel packages, and engaging visuals with HTML, CSS, and JavaScript to aid in trip planning.
- Streamlined the online booking system for flights, hotels, and activities.