

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 full-stack software development. 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

Relevant Courses

- Applied Research
- Artificial Intelligence (Machine Learning, Neural Networks)
- Probability & Statistics
- Linear Algebra
- Calculus
- 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 Trout Aquaculture Monitoring

Co-author (**Submitted to IEEE**)

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

AI & Full-Stack Software Engineer Intern | February 2025 – Present

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, 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.
- Integrated a robust search engine allowing users to filter trips by destination, price, date, and type of experience.
- Streamlined the online booking system for flights, hotels, and activities.
- Implemented various secure and reliable payment options, including credit cards.

COFFEE SHOP Web Application (FROSTY-DOSTY IFRANE) | January 2023 – May 2023

- Designed and developed a user-friendly web application to streamline café operations (customer service, inventory management, order management, billing, and payment processing) using HTML, CSS, JavaScript, and PostgreSQL.
- Integrated inventory management functionalities to track stock levels and automate stock replenishment for the manager, employing PostgreSQL.
- Implemented a secure billing module for accurate and efficient payment processing.
- Developed a manager's view including all reporting features to generate insights on sales, revenue, and popular menu items.

SKILLS

Python, C, C#, Java, Spark, Kafka, ReactJS, Flask, TensorFlow, 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.