

# HAMZA ERRAJI

Centralien Engineering Student

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## Profil

Generalist engineering student currently at Centrale Lille, looking for a 6-month gap-year internship starting in August 2025. Passionate about artificial intelligence, machine learning, and deep learning, I seek to apply my skills to impactful and challenging projects. Organized, autonomous, and creative, I aspire to contribute to innovation and the improvement of technical processes.

## Education

Academic Exchange Program	<a href="#">École Centrale de Lille</a>	02/2025 – 08/2025
Engineering Degree – Centralien Program	<a href="#">École Centrale Casablanca</a>	09/2023 – 09/2027
Preparatory Classes (MP Track)	<a href="#">lycée Omar Ibn Khatab, Meknes</a>	2021 – 2023
Mathematical Sciences Baccalaureate (Option A)	<a href="#">lycée Iqraa 2, Errachidia</a>	2020–2021

## Academic Projects

Scientific Project: Pedestrian Flow [Ecole Centrale Casablanca](#) **Casablanca** 2024

- Designed and optimized mathematical models based on differential equations, cellular automata, and multi-agent systems to simulate crowd dynamics during evacuations.
- Implemented simulations using Python and MATLAB, integrating machine learning algorithms and numerical optimization methods for pedestrian flow analysis.
- Performed quantitative analysis and model validation through Monte Carlo simulations, statistical regressions, and key performance indicators (KPIs).

Project learning by doing : INNOFAB [Ecole Centrale Casablanca](#) **Casablanca** 2023-2024

- Designed and developed a full-stack web application integrating SQL databases, an optimized backend architecture, and an interactive frontend for laboratory resource management.
- Implemented a computer vision system using YOLO Model and convolutional neural networks (CNNs) for tracking equipment and individuals through image processing.
- Optimized performance and automated processes for efficient data flow management, enhancing user experience and system reliability.

## Professional Experience

Operator Internship [CMCP - International Paper](#) **Kénitra** 07/2024 - 08/2024

- Gained insight into the company's operations and became familiar with the IT department's field of work.
- Analyzed ERP systems and contributed to backend development of an application optimizing the management of recycled cardboard transport trucks.

## Skills

- **Technical Skills:** Machine Learning, Deep Learning, Computer Vision, AI Agents, GANs, NLP, LLMs
- **Software :** MS Office, Python, SQL, Power BI,
- **Certifications :** IBM Machine Learning Professional Certificate, Software Engineering (UML), Google Project Management
- **Soft skills :** Teamwork, Project Management, Change Management, Interdisciplinary Collaboration, Operational Coordination

## Extracurricular Activities

Logistics Team Membe [BDE Centrale Casablanca](#)

Event Management Team Member [BDE Centrale Casablanca](#)

## Langues

- **English :** B2+
- **French :** DALF C1
- **Arabic :** Natif