ABDELMOUHAIMEN SARHANE

MSc in computer science student at INP-ENSEEIHT (French Engineering Degree) specializing in Image, Multimedia, and Artificial Intelligence, seeking a final-year internship in AI/Data and computer vision for March 2025.

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EDUCATION

MSc in Computer science Engineering Degree: Image and Multimedia | ENSEEIHT - Toulouse | 2022-2025

- Advanced courses in Artificial Intelligence methodologies, including Computer Vision, Deep Learning, Image Processing, Natural Language Processing, and Data Analysis
- Topics: Digital Audio, 3D Modeling, Compression, Streaming, Augmented Reality, Inverse Problems for 3D, Cloud Computing, Big Data...

Preparatory Classes MPSI/PSI | CPGE SAINT-BENOIT - Angers | 2020-2022

- Two years of intensive preparatory studies aimed at preparing students for entry into top engineering schools.

SKILLS

- Python & libraries (sklearn, pomegranate, scipy, TensorFlow - PyTorch, nltk, OpenCV), SQL, Pandas, R Studio, Microsoft Office (PowerBI, Excel, PowerPoint), Java, C, C++, OCaml, GIS, GDAL, OpenGL
- Docker, OpenVINO, Azure, AWS, Matlab, Web Stack (Django/Flask, HTML, CSS, JS, Ajax, React)
- ***Values***: Curiosity, Autonomy and Adaptability, Team Spirit, Expertise, Creativity

LANGUAGES

- English: C1
- French: Bilingual
- Arabic: Native
- Spanish & Japanese: Bilingual

PROFESSIONAL EXPERIENCE

October 2024 - Present — IRIT

Distributed Cooperative Perception Network for Autonomous Vehicles

- This project involved creating algorithms to process video and sensor data directly on vehicles and IoT devices, allowing them to share information in real-time for better traffic safety and coordination. Focused on reducing delays, improving object detection, and using data to predict traffic and hazards. *Technologies used: Edge AI, 5G, LoRaWAN,*

June 2024 - September 2024 — GET-OMP

Research Engineer Internship in Deep Learning | CNRS

- Adapted a deep learning CNN U-Net with Attention algorithm for Landsat satellite images to detect lakes in West Africa.
- Analyzed surface water changes in West Africa from 1984 to present.
- Evaluated water detection results against existing products.
- *Technologies used: Python, TensorFlow, QGIS, GDAL*

June 2023 - July 2023 — ENAC

HPC Developer and Data Analyst Internship

- Evaluated energy consumption in matrix computations between different compressors.
- Developed heatmaps from player detections and pose estimations, analyzed using machine learning and an innovative eco-friendly compressor, Blaz, allowing direct calculations on compressed data.
- Used C/C++ and PowerJoular to measure energy impact, contributing to an article accepted at the ICT4S 2024 conference.

PROJECTS

Personal Project | Customer Behavior Analysis | June 2024 - Present

- Developed a computer vision solution with Roboflow and YOLOv8 to track customer movements in supermarkets to generate 2D heatmaps for behavior analysis. Ongoing improvements: multi-camera re-identification, theft detection, and deployment on Edge devices (NVIDIA Jetson) for real-time processing.

Personal Project | Development of a Chatbot using RAG, Python | September 2024

- A conversational chatbot utilizing the RAG (Retrieval-Augmented Generation) technique to extract data from textual documents. The chatbot combined text generation using an LLM (Large Language Model) with the retrieval of relevant information through a database indexed with *LlamaIndex*.

Personal Project | Traffic Light Optimization with AI, Python | 2023

- Optimized traffic light control using deep learning based on traffic density computed from image processing and vehicle detection with cameras via OpenCV.

3D Rendering Engine in Java: Implemented a complete graphical pipeline | 2024

Developed a compiler in OCaml for a simplified language | 2023