

Aymen Amimoussa

Machine Learning Engineer

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Summary

Machine Learning & Computer Vision Engineer with hands-on experience building real-time industrial AI systems, deploying YOLOv8, and developing end-to-end data/ML pipelines. Strong background in Python, Computer Vision, Deep Learning, and Data Engineering with practical industry exposure during internships. Passionate about applying AI to manufacturing, automation, ADAS, and real-world perception systems. Currently seeking an opportunity in Europe as a **Machine Learning Engineer**, **Computer Vision Engineer**, or **Data Engineer**. Available immediately.

Technical Skills

Programming Python, SQL, R, Java

ML / DL Supervised & unsupervised learning, CNNs, Transformers, model training & optimization, predictive analytics

Frameworks NumPy, Pandas, TensorFlow, PyTorch, Keras, Scikit-learn, OpenCV, NLTK, SpaCy

Computer Vision YOLOv8, U-Net, object detection, instance segmentation, image processing, real-time video analytics, industrial vision

Data Eng. ETL pipelines, data preprocessing, SQL databases, data modeling, query optimization, database administration

Tools Git, GitHub, Jupyter, Docker (basic), Linux, SSMS, NVR/CCTV systems, labeling tools

Cloud Azure fundamentals (data engineering basics)

Soft Skills Problem solving, critical thinking, adaptability, active learning, teamwork, time management

Experience

Jun 2024 – **AI Software Developer Intern**, *msg Plaut Hungary*, Budapest, Hungary

- Developed and trained ML/DL models (CNNs, YOLO-based detectors) for perception tasks in industrial and autonomous-systems environments.
- Built pipelines for image/video preprocessing, dataset creation, model validation, and real-time inference deployment.
- Integrated AI modules into applications running on embedded hardware for real-time processing.
- Managed data collection, cleaning, annotation, augmentation, and performance evaluation.
- **Tools:** Python, PyTorch, TensorFlow, OpenCV, YOLOv8, Git, SQL

Feb 2023 – **Database Administrator Intern**, *Directorate of Ouargla Province*, Ouargla, Algeria

- Assisted in the maintenance of SQL databases, including backups, restores, and recovery procedures.
- Monitored database performance, identified bottlenecks, and optimized queries to increase data retrieval efficiency.
- **Tools:** SQL Server, SSMS

- Mar 2022 – **Database Administrator Intern, Mother & Child Maternity Hospital, Ouargla, Algeria**
May 2022
- Contributed to database maintenance activities, ensuring data integrity and availability.
 - Monitored system performance and improved data access workflows in collaboration with IT staff.
 - **Tools:** SQL Server, SSMS

Projects

Real-Time CNC Machine Monitoring System (YOLOv8)

- Designed and implemented a real-time monitoring system for CNC machines using YOLOv8.
- Performed instance segmentation and detection of chips, tool, workpiece, and vice in industrial scenes.
- Created a custom dataset, annotation workflow, and preprocessing pipeline for robust training.
- Integrated the model with a camera-based acquisition system (Legrand CM7020 Dome Camera + Hikvision NVR).
- Achieved high-accuracy detection and stable real-time performance suitable for industrial monitoring.
- **Tools:** Python, YOLOv8, OpenCV, PyTorch, NVR systems, labeling tools

Smart Quality Control System (Deep Learning)

- Developed an AI model to detect defects on manufactured items on an assembly line.
- Built data pipeline, preprocessing, and training workflows with appropriate evaluation metrics.
- **Tools:** Python, CNNs, TensorFlow, Pandas

Environmental Insights – Air Quality Prediction

- Performed exploratory data analysis and feature engineering to forecast air pollution levels (e.g., PM2.5).
- Trained and evaluated regression models for time-series prediction.
- **Tools:** Python, Scikit-learn, Pandas, Matplotlib

Kannada Digit Recognition

- Built and trained a deep learning digit classifier using CNNs for Kannada digit recognition.
- Achieved strong classification performance on a benchmark dataset.
- **Tools:** Python, TensorFlow, CNNs

Education

- Jul 2025 **Master's in Computer Science – Digital Factory 4.0, Eötvös Loránd University (ELTE), Budapest, Hungary**
Thesis: *Process Monitoring in Case of Image Processing – CNC Machine (YOLOv8 Vision System)*
- Jun 2023 **Bachelor's in Mathematics & Computing, Kasdi Merbah University, Ouargla, Algeria**

Certifications

NVIDIA – Fundamentals of Deep Learning
Introduction to Data & Data Science – 365 Data Science
Azure Data Engineering (in progress)

Languages

Arabic Native
English C2
French B2