GHAITH KHLIFI

AI Engineer | Computer Vision Engineer | Machine Learning Specialist

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PROFESSIONAL SUMMARY

AI Engineer and Computer Vision Specialist with 4+ years of experience designing and deploying real-time, data-driven systems across agriculture, finance, and infrastructure sectors. Experience spans object detection, segmentation, pose estimation, anomaly detection, time-series forecasting, and scalable data pipelines. Strong in Python, SQL, TensorFlow, OpenCV, and practical ML engineering workflows, with a track record of improving analytics accuracy, reducing inference time, and delivering measurable business impact. Currently pursuing a PhD in Artificial Intelligence, specializing in multimodal deep learning.

PROFESSIONAL EXPERIENCE

Flox Ltd, London, UK **09/2022 - Present**

Computer Vision Engineer

Develop computer vision solutions for real-time poultry farm analytics, with work spanning object detection, activity tracking, anomaly detection, calibration, and deployment-focused model improvement.

- Led the end-to-end development of a real-time YOLOv7-12 object detection model, improving analytics accuracy by 30% and reducing inference time by 40%.
- Processed and transformed 1M+ rows of poultry monitoring data using Pandas and SQL, optimizing model training datasets for 2Sisters and Altech.
- Built a custom TensorFlow segmentation model that achieved 98% accuracy in shed floor coverage estimation, increasing calibration precision by 20%.
- Developed and deployed an image classification model with 95% accuracy to detect camera obstructions (for example, dust and blur), reducing manual inspection needs.
- Integrated geometric calibration using high-order homographies to support 500+ PTZ cameras with improved location precision and spatial analytics.
- Deployed a pose estimation model to monitor farmer activity in poultry sheds, detecting safety hazards such as falls and triggering real-time alerts.
- Fine-tuned a LangChain-based LLM with LLaMA for early fire and smoke anomaly detection, enhancing operational safety through AI-driven alerts.

Massive Analytics, London, UK **09/2021 - 11/2022**

Python Engineer

Implemented and optimized machine learning models and data workflows across transportation, infrastructure, and AI research contexts.

- Designed and implemented ARIMA and NeuralProphet models to forecast environmental conditions, improving predictive reliability by 25%.
- Built automated data pipelines in Python and SQL, enabling continuous integration of multimodal infrastructure datasets.
- Co-developed possibilistic clustering and decision tree algorithms, increasing classification accuracy in noisy data environments.
- Contributed to Oscar 4 Hyperion H by integrating generative AI and quantum logic modules, enhancing real-time AI monitoring systems.
- Authored a peer-reviewed paper on transforming continuous features for possibilistic models, improving accuracy in uncertain datasets.

Nyuron Consulting, Tunis, Tunisia **09/2019 - 08/2021**

ML Engineer

Developed machine learning models and data engineering pipelines to improve trading strategies and risk management in the cryptocurrency sector.

- Designed and deployed end-to-end data pipelines for real-time cryptocurrency analysis using Python and SQL, enabling faster insight delivery for live trading systems.
- Built and fine-tuned a reinforcement learning model that achieved a 30% trading profit during a 3-month testing period, outperforming baseline strategies.
- Developed computer vision models using OpenCV and CNNs to detect chart patterns with 90%+ accuracy, automating technical pattern recognition.
- Applied probabilistic modeling techniques for portfolio optimization, reducing risk exposure by 5% across high-volatility crypto assets.
- Collaborated with developers and data scientists to integrate ML components into a live trading platform, improving execution speed and predictive reliability.

EDUCATION

PhD in Artificial Intelligence (In Progress) - University of El Manar - Tunisia 01/2025 - Present

Master Research Degree in Information Systems - University of Sousse - Tunisia 10/2020

Fundamental Diploma in Computer Science - University of Kairouan - Tunisia 05/2017

Bachelor's Degree in Computer Science - Mixed-High School - Tunisia 06/2014

SKILLS

Computer Vision & AI: Object Detection, Segmentation, Pose Estimation, Anomaly Detection, Time Series Modeling, Transformer Models, Reinforcement Learning, Multimodal Deep Learning

Languages & Frameworks: Python, TensorFlow, Keras, OpenCV, SQL, NoSQL, React.js

Engineering & Deployment: AWS, Docker, Kubernetes, ETL Pipelines, Real-Time Analytics, Data Engineering

Languages: Arabic (Native), English (Professional), French (Professional)

RESEARCH PUBLICATIONS

- Non-specificity-based Supervised Discretization for Possibilistic Classification (SUM)
- Multi-label Classification of Mobile App User Reviews using Pre-Trained Neural Language Models (ECSQARU)