OMAR AL ETHAMAT

Computer Vision and Robotics Engineer

Eligible to work in the UK | omaralethamat@gmail.com | Portfolio | Github | Linkedin

AI & Robotics Engineer focused on Computer Vision, Robotics, and autonomous intelligent systems, with hands-on experience developing real-world AI and embedded applications. Passionate about building practical technologies that combine software, hardware, sensors, and robotics into functional systems, including space and advanced engineering applications. Experienced in designing end-to-end solutions through experimentation, system integration, and applied AI engineering.

PROFESSIONAL EXPERIENCE

AI Engineer Intern, Orange Jordan . Internship **Feb 2026 - Present**

- Applied Computer Vision and image preprocessing techniques for real-world AI applications
- Developed an end-to-end Speech-to-Text (STT) service, including model development, backend APIs, and production deployment
- Built and optimized scalable backend and data systems, including RAG pipelines, database integration, and large-scale data processing using Apache Spark

Embedded Software Engineer, Al-Rhim Sat . Part-time **Nov 2025 - Present**

- Developing embedded software for a student-led 1U CubeSat selected for launch through United Nations Office for Outer Space Affairs (UNOOSA) and Exolaunch initiative
- Programming the On-Board Computer (OBC), handling data processing and satellite communication functions
- Designing and implementing microcontroller-based systems for wildlife tracking using LoRa technology in real-world environments

Computer Vision Engineer , Qynerva . Full-time **April 2025 - Present**

- Developed multi-stage deep learning pipeline (segmentation, classification, XAI)
- Achieved 96.77% accuracy (F1: 0.9679) across 4 tumor classes (100% on normal)
- Built segmentation model with 98.98% voxel accuracy (Dice up to 0.78)
- Designed explainable AI using visual heatmaps
- Developed end-to-end platform with backend + chatbot
- Applied generative AI techniques to synthesize MRI data

Machine Learning Virtual Intern , Intern Intelligence . Internship **Feb 2025 - March 2025**

- Developed 3+ ML/NLP models (cybersecurity, healthcare, text classification) achieving up to 98% accuracy in spam detection and 96%+ in medical classification
- Built end-to-end pipelines including preprocessing, TF-IDF/LSTM modeling, and hyperparameter tuning (GridSearchCV), improving model performance by 10–15%
- Deployed interactive apps using Streamlit for real-time prediction and moderation, handling multi-class classification with 87% accuracy

NLP Engineer , High Yield Medicine . Freelance **Feb 2025 - March 2025**

- Developed an NLP-based medical research retrieval system, achieving 100% recall (no missed relevant studies) and 79% precision when benchmarked against expert annotations
- Integrated LLMs and external APIs to improve search relevance, reaching an F1-score of 0.88 and increasing the accuracy of literature discovery

EDUCATION

B.Sc. in Artificial Intelligence and Robotics **Oct 2022 - Oct 2026**

Al-Balqa Applied University (BAU)

Software Engineering Program (Core Curriculum) **Aug 2025 - Oct 2026**

42 Amman

- Project-based training in C/C++, system programming, networking, and software engineering

CERTIFICATIONS

Sequence Models — **May 2025**
DeepLearning.AI

Neural Networks and Deep Learning — **May 2025**
DeepLearning.AI

Back-end Programming for Web Applications — **Apr 2025**
Al-Balqa Applied University (BAU)

Backend Development Course — **Oct 2024**
IEEE BAU CS (Computer Society)

Azure Fundamentals — **Mar 2025**
Microsoft

Certificate of Participation - 1st At University Rank — **Oct 2024**
IEEEXtreme

SKILLS

AI:
- ML, DL, Computer Vision, Generative AI, Reinforcement Learning, OpenCV, TensorFlow, PyTorch, YOLO, CNNs

Programming:
- Python, C/C++,

Data & Analysis:
- Data Analysis, Databases, Pandas, NumPy, Apache Spark

Tools & Technologies:
- Linux, Git, Docker, Microsoft Azure

Embedded & Robotics:
- Embedded Systems, Microcontrollers, ROS, Arduino

Networking & Systems:
- Networking, System Administration, DevOps

PROJECTS

EduVision — Smart School System — Graduation Project | Link
- Developed a multi-modal AI system for real-time student monitoring using three integrated modules: Camera, Smartwatch, and Academic Performance analytics
- Built a YOLO-based Computer Vision model for student engagement and classroom activity analysis, achieving 77% mAP
- Developed a MediaPipe Face Mesh pipeline to analyze focus and distraction through facial movement and head-position tracking
- Built smartwatch and academic prediction modules for physiological and performance analysis, achieving up to 91% and 89% accuracy respectively
- Implemented live dashboards, historical analytics, and AI-generated reports with chatbot integration for real-time student monitoring
- Performed end-to-end system validation using custom ground-truth testing, achieving 100% accuracy in controlled scenarios

VisionPong — Computer Vision Game | Link
- Built a real-time hand gesture-controlled game using computer vision techniques
- Implemented object tracking and interaction using OpenCV and MediaPipe

MiniShell — System Programming Project | Link
- Built a Unix-like shell in C, implementing core Bash functionalities including pipes, redirections, and environment variable expansion
- Designed a custom lexer and parser to handle command tokenization, quoting, and syntax interpretation
- Managed process execution using fork/execve, file descriptors, and signal handling (Ctrl-C/D), ensuring stable multi-process behavior

OrbitCV — Satellite Image Processing Tool | Link
- Built an interactive satellite image preprocessing tool using C++ and OpenCV for real-time image transformations and analysis.
- Implemented image operations including cropping, rotation, scaling, affine, and perspective transformations with keyboard and mouse interaction.
- Integrated a practical SDR-based satellite reception workflow, processing real satellite images captured through custom antenna setups.