

OMAR KHALID ALGHAMDI

Dammam, Saudi Arabia | Saudi national | Open to relocation
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PROFILE

First Class Artificial Intelligence graduate from Northumbria University with practical experience in machine learning, computer vision and applied AI. Combines research and analytical problem solving with hands-on development, from deep learning experiments and autonomous robotics to an LLM-powered client prototype. Strengths include experimental design, technical writing and communicating complex ideas clearly. Seeking a graduate role in machine learning, computer vision or applied AI.

EDUCATION

BSc Artificial Intelligence, First Class Honours | Sept 2023 - Sept 2026

Northumbria University, Newcastle upon Tyne, UK

Dissertation: Quantifying the Influence of Fundus Image Quality on Automated Diabetic Retinopathy Severity Detection

EXPERIENCE

RDK Live | Developer and Client-facing Team Member | Feb - May 2025

Student consultancy, Durham, UK | 12-week AI learning-path prototype

- Led OpenAI API integration in a Python/Flask prototype that converted learner goals into personalised learning paths from the client's SCORM course library.
- Designed prompts and structured responses; implemented parsing and error handling to return JSON to the interface, and built the web front end.
- Presented progress to the client in accessible language and worked in weekly iterations under an NDA. Delivered a prototype that tagged six SCORM packages and met the client's core requirement.

PROJECTS

Diabetic Retinopathy Grading under Image Degradation | 2025 - 2026

- Built a five-class grading benchmark from a public collection of 92,501 images, capping each class and adding class weights to handle the imbalance.
- Trained a baseline CNN from scratch and three ImageNet models with transfer learning; evaluated with macro F1, quadratic weighted kappa, ROC-AUC and one-way ANOVA.
- Tested robustness across five blur levels and used Grad-CAM to examine changes in model attention as image quality declined.

Autonomous Road Inspection Robot | 2025

- Configured autonomous navigation on a provided map using Nav2 and LiDAR-fed costmaps for obstacle avoidance.
- Built Python ROS 2 nodes for waypoint following and real-time pothole detection, combining image and depth data to estimate map coordinates and pothole area.
- Derived the pixel-to-map transform, removed duplicate detections within 0.30 m and logged results to CSV; detected 16 of 18 potholes in a typical simulation run.

TECHNICAL AND PROFESSIONAL SKILLS

Programming: Python, JavaScript; familiar with Java and C

Machine learning: TensorFlow/Keras, scikit-learn, CNNs, transfer learning, model evaluation, Explainable AI (Grad-CAM)

Computer vision and robotics: OpenCV, image classification and processing, ROS 2, Nav2, autonomous navigation

AI applications: LLM integration, prompt engineering, REST APIs, Flask, Azure Machine Learning

Data: data preprocessing, NumPy, Pandas, statistical analysis

Research: experimental design, literature reviews, technical writing, Responsible AI

Tools: Git/GitHub, Linux

ADDITIONAL INFORMATION

Languages: Arabic (native), English (fluent) | Activities: Northumbria Students' Union