Junaid Asghar

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Data Science | Computer Vision | Machine Learning

SUMMARY

MSc graduate in Machine Learning for Visual Data Analytics experienced in building end to end computer vision and machine learning systems in Python. Strong foundation in deep learning, image classification and detection with a focus on model explainability. I can confidently design, stress test and iterate on modelling pipelines whilst carrying out rigorous experimentation alongside providing clear and concise communication. Strongly motivated by providing actionable analysis on large datasets.

EDUCATION

[Queen Mary University of London]

[MSc Machine Learning for Visual Data Analytics] - Merit   **[Sep 2024 – Sep 2025]**

- **[Thesis]:** Live plant disease detection software utilising core machine learning techniques to provide a multi label explainable AI solution to help farmers and gardeners easily catch crop disease

- **[Key modules]:** Neural Networks & Deep Learning; Computer Vision; Natural Language Processing; Machine Learning; Deep Learning & Computer Vision; Visual Data Analysis.

[BSc Computer Science] – First Class   **[Sep 2021 – May 2024]**

- **[Project]**: E-commerce analytics platform delivering actionable insights from market and sales data using ML and SQL on AWS.

- Carried out multiple group projects such as designing a weather app using Java providing teamwork and scheduling experience whilst achieving a score of 80+%

TECHNICAL EXPERIENCE

Real time Visual Diagnosis System – Python, PyTorch, YOLOv8, EfficientNet, Grad-CAM, PyQt, Pandas, XAI

- Built an application combining object detection and image classification with an explainable interface for users.

- Designed experiments and ablations to tune thresholds, improve precision/recall and reduce false positives.

- Integrated **Grad-CAM**, **LIME** and **SHAP** to expose model attention and support human in the loop verification. This provided explainability in every part of the system especially aiding end user understanding.

Image Classification Benchmarks – Python, TensorFlow/PyTorch, Pandas, FastAPI

- Implemented baselines through advanced CNNs (VGG/ResNet/GoogLeNet) to inform model selection across varied data conditions.

- Emphasised generalisation and failure mode analysis (calibration, class imbalance checks, misclassification review) instead of focussing on accuracy which produced clear experiment notes for thesis.

E-commerce Analytics Platform – SQL, Python, AWS, Tableau/Power BI, Pandas, C#

- Engineered data pipelines and dashboards that transformed raw transactional data into decision ready metrics.

- Optimised queries and storage in AWS to reduce cost while improving latency for interactive analysis.

TECHNOLOGY STACK
Languages & Scripting: Python, SQL, Java, JavaScript
Data & ML: TensorFlow, PyTorch, Machine Learning, Neural Networks, Computer Vision, Pandas
Databases & Cloud: Amazon Web Services, Database Design & Management
Frameworks & Tools: Flask, FastAPI Outlook, Google Workspace, PowerPoint, Word, Teams, Excel

HOBBIES AND INTERESTS

Programming and game development; PC optimisation; device repair; graphic design; open-source contributions.