Alexander Roberts

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Education

M.Sc. **Birmingham City University**, Big Data Analytics   Sept 2024 – Sept 2025

- Awarded Distinction - 74% module average.
- **Key modules:** Data Mining, Applied Statistics, Advanced Databases, Web Social Media Analytics and Visualisation, Big Data Management, and Individual Master's Project.
- For Master's project, developed an exceptional solution for a company seeking to improve point-of-care-testing using machine learning. Achieved over 93% accuracy, including explainability and uncertainty metric visualisations. The results are scheduled to be published in an official research paper.
- Delivered excellent results in a short timeframe (3 months).
- Maintained high attention to detail of complex and noisy data.
- Regularly communicated and showcased project progress to the stakeholders using presentations and experimental results.
- Communicated the project and its results to a large audience and a panel of industrial judges at PGXPO 2025, and subsequently, being awarded the Research Excellence Award (top prize).

Google, Google Cloud Data Analytics   March 2025

- **Key insights:** data governance and security, cloud computing, data analysis and visualisations in the cloud, data dashboard and report building, data lifecycles, and data workflows.
- 5-month comprehensive industrial course.

B.Sc. (Hons) **Birmingham City University**, Computer and Data Science   Sept 2021 – Aug 2024

- Awarded First Class - 81% module average.
- **Key modules:** Artificial Intelligence and Machine Learning, MLOps, Modern Data Stores, Deep Neural Networks, and Individual Honours Project.

Experience

Nexus People, Warehouse Operator   Nov 2025 - Present

- Operated effectively in ambiguous situations, demonstrating resilience during operational challenges.
- Maintained strong attention to detail, executing processes accurately and supporting timely, metric-aligned deliveries.

Community Library, Voluntary Librarian / Assistant Coordinator   Aug 2022 - Present

- Communication, coordination and teamwork are applied throughout between the diverse groups of volunteers.
- IT support buddy: helped dozens of non-technical users with tech-related issues and barriers.
- Demonstrated leadership by proactively helping maintain the library and coordinate the volunteers.

Community Hall, Voluntary Data & IT Support   Nov 2025 – Present

- Helping push forward the charity's mission to modernise and revitalise the village hall.
- Contributed to the charity's digital transformation by assessing current processes and recommending technology solutions aligned with organisational goals.
- Implemented a central communication platform, improving information flow and enabling trustees to track engagement more effectively.
- Supported the charity's outreach by monitoring social media activity, identifying trends, and presenting insights to guide content strategy.

Public Projects

Lung Image Classification Using PyTorch

- Developed a deep neural network which can classify real-world X-ray lung images into four categories.
- Achieved over 94% accuracy.
- Tools Used: PyTorch, PyTorch Lightning, SciKit Learn, Matplotlib, Seaborn, Pandas.

github.com/al-roberts-computing/lung-classification-pytorch-lightning ↗

Large Language Model API Connection Handler

- Created an LLM API connection handler which is meant to illustrate how remote LLMs can be leveraged programmatically. This also included methods for context trimming and conversation history tracking.
- Tools Used: OpenAI, Object-Oriented Programming, Factory and Singleton Design Patterns.

github.com/al-roberts-computing/llm-handler-with-logging ↗

Traffic Accident Prediction Using ML and MLOps

- Created and automated machine learning pipelines for predicting traffic accident danger levels in Greater London.
- Tools used: Anaconda environments, Apache Airflow, Dask, Docker Compose, MLflow, PyTorch Lightning, Redis, TailWindCSS, NodeJS, data pipelines.

github.com/al-roberts-computing/traffic-accident-prediction ↗

Technologies

Proficient languages: Python (5+ years), R (1+ years), SQL (3+ years), Java (3+ years), JavaScript (3+ years).

Familiar languages: C++, React, F#, TypeScript, TailWindCSS.

Familiar technologies: Microsoft Excel (advanced), Microsoft Azure, Google Cloud, Microsoft PowerBI, Git, GitHub, MySQL, MSSQL, MongoDB, Apache Cassandra, Neo4j, NodeJS, HBase, Hadoop, PyTorch, Tensorflow, Apache Spark, Docker, Anaconda environments, Redis, MLflow, Dask, Apache Airflow.

Personal Profile

Versatile and proactive data professional with a robust foundation in data science, machine learning, and computational problem-solving. Experienced in tackling diverse challenges and crafting optimal solutions. Passionate about extracting deep insights from data to drive decision-making in dynamic environments. Strong ability to present findings and implications to both technical and non-technical stakeholders. Combines deep technical expertise with strong communication and collaboration skills, ensuring precision, adaptability, and impact across multidisciplinary teams.

I am a British citizen and have the right to work in the UK unrestricted. Moreover, I have a full driving licence and own vehicle. Finally, I also have a full enhanced DBS certificate (which is registered with the Update Service).