# Louise Kirkham

## (MPhys MSc) Senior Data Scientist | Machine Learning Ops

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## Summary

A passionate data scientist with diverse research experience within both government and industry, and demonstrated ability to lead collaborative projects .

Particular interest in applying machine learning techniques to optimisation and recommendation problems; and using MLOps best practices to scale and productionise data science projects - to provide true, data-driven, cloud-based solutions.

Always looking for new opportunities with forward-thinking organisations to deliver real impact, as well new challenges for continued professional growth.

## Skills

**Programming languages:** Python, R, Matlab, Haskell, Scala

**Model Deployment:** Docker, Kubernetes

**Cloud Computing:** Google Cloud Platform

**ML Frameworks:** Scikit-learn, NLTK, Tensorflow

**Data Visualisation:** Plotly, Matplotlib, Seaborn, ggplot2, Dash, Shiny

**Processing and Compute Resources:** SQL, Spark

**Ways of Working:** Agile Framework,
Git version control,
Lean Startup Approach to Data Science,
Scaling Data Science Projects, Test Driven Development,
ML Ops Practices

## Core Values

Honesty and Integrity

Collaboration

Accomplishment and Achievement

Variety and Diversity

Continued Professional Development

Work/Life Balance

## Education

**University of York** — 2004 - 2008
MPhys (Hons) Physics with Astrophysics 2009
Awarded: 2:1
Dissertation: Upgrading the Department's Radio Telescope for the Detection of the 6.7 GHz Methanol Maser Line

**University of Manchester** — 2011 - 2012
Radio Wave Imaging and Sensing MSc (Hons) 2011
Awarded: Distinction
Dissertation: Characterisation and Calibration of a Large Aperture (1.6 m) ka-band Indoor Passive Millimetre Wave Security Screening Imager [Proc. SPIE 8544, Millimetre Wave and Terahertz Sensors and Technology V, 854408 (26 October 2012)]

## Employment

### Royal Mail Group

**Senior Data Scientist (ML OPs)** — Nov. 2021 - Present
- Leading data science projects to understand operational and commercial problems and delivering ML solutions to the business that provide tangible benefit.
- Particular focus on CI/CD processes, ML Ops and end-to-end deployment of models to Google Cloud Platform production environments.
- Line management and mentoring of of junior team members; support to wider data science team with agile ways of working, ML Ops practices and cloud deployment of data science projects.
- **Key achievement**: development and delivery of the Highways England Automated Diversion System (HEADS) which recommends fast and safe diversions around planned road closures - Royal Mail's network losses fell to a 10-year low following it's introduction and has been key evidence of Royal Mail's effort to meet Ofcom's Quality of Service targets and avoid annual fines of up to £150m.

**Data Scientist** — Dec. 2019 - Nov. 2021
- Supporting projects within the Data Science team to deliver new insights and process-enhancing tools for the business to reduce costs, increase efficiency and improve safety.
- Development of models for revenue prediction, recommender systems, NLP and sentiment analysis, demand forecasting and route optimisation.
- Line management and mentoring of of junior team members; support to wider data science team with agile ways of working, ML Ops practices and cloud deployment of data science projects.
- **Key Achievement**: Redeployment of on-premise data science solutions to the cloud and development of new CI/CD processes for more efficient delivery of new solutions - faster delivery by the whole data science team, reduced solution costs by 50% and improved stability and reliability.

**Junior Data Scientist** — July 2018 - Dec. 2021
- Supporting projects within the data science team within Group Business Intelligence, focused on customer experience insight through natural language processing of enquiries, customer segmentation revenue prediction and churn modelling.

### Defence Science and Technology Laboratory (DSTL)

**Senior Research Scientist** — Apr. 2018 - July 2018
- Providing scientific expertise to support research and development projects within the Sensing and Detection group of the Counter Terrorism and Security division.
- Experimental design and evaluation of detection and diagnostic technology for military and security applications. Leading an experimental trial team to deliver cutting edge research including laser-plasma acceleration at a world-class high-power laser facility.
- Associated publication: Response of nuclear track detector CR-39 to low energy muons [H S P Thomas et al 2021 Plasma Phys. Control. Fusion 63 124001]

**Research Scientist** — Nov. 2014 - Apr. 2018
- Support to research and development work within the Novel RF Techniques Team of the Sensing and Detection Group, Counter Terrorism and Security Division.
- Collaborating with industrial, academic and other government departments both UK and internationally to deliver critical, cutting-edge advice and insight to military and government stakeholders.

**Graduate Research Scientist** — Nov. 2012 - Nov. 2014
- Provided support to research and development work within the Physical Detection Team, Sensing and Detection Group, Security Sciences Department.
- Contributed to experimental design and evaluation testing of operational military diagnostic equipment.

## Activities

Swing and jazz dance (Lindy Hop and Chrous Line) , quad-skating, motorcycling

Volunteering - Data Science support to DataKind UK; Outreach with STEMnet Ambassador Program; Support to Hackney and Homerton Mutual Aid Groups

Stage-managing and Front-of-House support to vintage dance and cabaret events.