Dr Jonathan Carlton

Machine Learning Scientist & Engineer | Fell runner
More information: jonathancarlton.co.uk

Professional Experience

Research Associate   March 2025– June 2025

University of Manchester, Manchester, UK

- Fixed-term research contract building models to predict health conditions using ECG data and applying interpretability methods to discover saliant features.
- Tools: PyTorch, ZenML, MLflow, DVC, and Docker.

Senior (Sept 2022 – March 2025) & Lead (Acting; May 23 – August 24) MLOps Engineer   Sept 2022– March 2025

Fuzzy Labs, Manchester, UK

- Led the end-to-end delivery of machine learning projects from conception to production-ready in diverse domains, including national security, education, and e-commerce, as well as internal tooling. Three-time positive impact champion.

Notable Projects:

- Investigated how LLMs can introduce efficiencies in UK policing, includes using speech-to-text models, building data pipelines, and training and evaluating a Masked Language Model on interview transcripts. Tools: transformers, ChatGPT, MLFlow, DeepEval, Ray, and Azure.
- Developed an NFT recommendation engine, covering data identification, pipeline creation, model development, and infrastructure provisioning for serving recommendations. Tools: ZenML, scikit-learn, survival models, MLFlow, Seldon, BigQuery, Docker, Kubernetes, and GCP.

Other projects have included creating open source MLOps multi-cloud infrastructure stacks for traditional and generative ML, investigating novel applications for large language models, and building a RAG-based mental health conversational system.

Additional Responsibilities:

- Mentored and developed engineering talent, actively enabling opportunities for team members to progress in their careers and setting technical best practises.
- Partnered with the commercial team to identify machine learning application opportunities for prospective clients and translating them into tailored proposals.

Postdoctoral Research Associate   Feb 2022– Sept 2022

University of Manchester, Manchester, UK

- Researcher on a cross-functional project to build data pipelines, collaborating with academics and industry, to generate and serve recommendations on an e-learning app. Focused primarily on initial data science to understand and find predictive data.

Research Assistant   July 2021– Sept 2022

University of Manchester, Manchester, UK

- Collaborated with Art UK and the Smithsonian to build an artwork-based recommendation system that delivered a tailored curation of museum content. Tools: TensorFlow, FAISS, Gensim, NumPy, SciPy, Pandas.

Education

University of Manchester (BBC R&D Sponsored)

PhD in Computer Science, "Using Data to Understand How Audiences Engage with Interactive Media"   **January 2022**

- Embedded into BBC R&D's FXT team working on Data Science problems, such as building predictive models of audience engagement and abandonment with nationally released interactive media experiences. As an example of my work, see my BBC R&D blog post here.

University of Gothenburg ACM Summer School on Recommender Systems   **September 2019**

Newcastle University MComp in Computer Science (Cloud Computing & Big Data Analytics), 1st class   **July 2017**

Selected Research Publications   publications.jonathancarlton.co.uk

- Carlton, J., et al. Using Interaction Data to Predict Engagement with Adaptive Media. *29th ACM International Conference on Multimedia (MM'21)*. 2021.
- Carlton, J., et al. Inferring User Engagement from Interaction Data. *ACM Conference on Human Factors in Computing Systems (CHI'19)*. 2019.
- Carlton, J., et al. Identifying Latent Indicators of Technical Difficulties from Interaction Data. *ACM SIGKDD Workshop on Data Science, Journalism, and Media (DSJM 2018)*. 2018.