07471 812947
London
lucas.curtin@gmail.com

Lucas Curtin, MSci

Data Scientist

GitHub: boboboon
Website: boboboon

Objective

I am an MPhil student in Data Intensive Science at the University of Cambridge, where I develop software for particle phenomenology studies, Bayesian inference, high performance computing and deep learning. In my role as a Data Scientist at Kantar I build predictive and forecasting models using ARIMA and ensemble methods to optimise content strategies and detect anomalies in real time. I hold an MSci in Physics from UCL specialising in quantum machine learning for high energy physics. I am proficient in Python, R, SQL and C++ and I am currently mastering Rust by developing a low latency portfolio optimisation engine.

Skills

Tools and Languages: Python, SQL, MATLAB, C++, Rust, Excel, Git, Docker, Bash, AWS, TensorFlow, PyTorch
Quantitative Techniques: Time-series modelling, Monte Carlo simulation, stochastic calculus, regression and multivariate analysis, optimisation and numerical methods, principal component analysis, Bayesian inference

Education

University of Cambridge **Oct 2024 - Present**
MPhil in Data Intensive Science

- **Statistics:** Advanced time-series analysis, stochastic processes, multivariate regression, Bayesian inference, optimisation algorithms, risk modelling
- **Machine Learning:** Deep learning architectures (CNNs, GNNs), transformers and large language models, model interpretability, validation and deployment
- **High Performance Computing:** Scientific programming in Python, C++ and Rust, parallelisation with MPI and OpenMP, GPU acceleration, Linux system administration and cluster management
- **Physics & Image Analysis:** Particle physics phenomenology, quantum field theory, advanced image-analysis techniques for experimental data
- **Thesis:** "Neural networks for the non-singlet T_3x parton distribution function determination" - developing Monte Carlo-driven neural network architectures to verify ongoing methods for global QCD analysis.

University College London **October 2019 - July 2023**
Physics MSci (2:1)

- **Statistical Mechanics & Stochastic Methods**: advanced statistical mechanics, Monte Carlo simulation, Markov chain modelling, stochastic differential equations and Itô's lemma
- **Particle Physics & Big Data Analysis**: processed large-scale detector data with the ROOT framework, developed C++ analysis pipelines, built a neutrino flavour oscillation simulation
- **Prizes**: Awarded first prize for cohort-wide analysis on the implementation of marine scrubbers on cargo ships

Experience

Kantar **July 2023 - Present**
Data Scientist

- Lead multiple international projects analysing multi-terabyte viewing datasets to extract actionable insights on audience behaviour
- Architect and implement scalable time-series forecasting pipelines using Prophet, random forests and ensemble methods to predict meter health and pre-empt failures
- Design and deliver interactive executive dashboards for global clients, visualising panel meter health metrics and key performance indicators
- Received an acknowledgement award for research contributions in predictive analytics and dashboard innovation

Amazon, East London **July 2022 - October 2022**
Operations and Logistics Associate

- Developed and deployed a machine-learning classifier on key logistical metrics to diagnose root causes of problem packages and reduce error rates
- Integrated real-time analytics into an executive dashboard for London branch managers, enabling targeted interventions and improved on-time delivery performance
- Authored and presented a whitepaper on the software's methodology and impact, earning a merit award for operational excellence

Hackathons

- Winner of the Tezos × EasyA Hackathon, developing dynamic art and NFT minting on Tezos to increase gallery footfall.
- Winner of the Polkadot × EasyA Hackathon, creating project-specific blockchains to streamline insurance industry processes.