JAMES LEADBETTER

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EDUCATION

The University of Edinburgh September 2023 - Present (Expected completion Aug 24)
MSc Computational Applied Mathematics

· Topics including: Uncertainty Quantification, Bayesian Theory, Inverse Methods, Data Assimilation, Stochastic Modelling, Stochastic Differential Equations, Numerical Linear Algebra, Machine Learning in Python, Dynamical Systems, Numerical Partial Differential Equations.
· Programming Projects: Building and investigating a two-layer neural network from scratch using NumPy, implementation of numerical linear algebra algorithms, simulating Langevin dynamics, discretisation methods for ODEs, all using Python and Jupyter Notebooks.
· Research Projects: Poster presentation on recurrent neural networks, seminar report on inverse methods for topographic upscaling, seminar summaries for various topics in applied and computational mathematics.

University of Southampton September 2018 - July 2021
BSc Mathematics with Computer Science

· First Class Honours and Dean's List Award.
· Final year research project exploring key aspects of random matrix theory using computational methods.
· Topics including: Stochastic Processes, Partial Differential Equations, Statistical Modelling, Functional Analysis, Financial Mathematics, Optimisation, Computational Biology, and programming in Java, Python, C and R.
· Men's Lacrosse team (playing in BUCS and Varsity matches), Bloomberg Market Concepts, 2020 Mathematical contest in Modelling.

The Willink School September 2016 - July 2018
A-Levels

· Mathematics - A*, Further Mathematics - B, Computer Science - B

SKILLS

Programming Languages

· Python, Go, SQL, R, Java, C, LaTeX.

Technologies

· Git, Docker, Kubernetes, Pandas, NumPy, Pytest, Redis, Jupyter Notebooks, Unix.

WORK EXPERIENCE

Dragonfly, Southampton July 2021 - August 2023
Software Engineer - Full-time

· Designed and lead development on an overhaul of our Python-based trading backtesting system, improving scaleability and reliability using Kubernetes and GCP.
· Worked in a team designing and implementing production grade trading algorithms in Go and Python, gaining knowledge of options and futures contracts and orderbook behaviour.

· Developed scalable data and signals streaming infrastructure using Go and Redis for use by trading algorithms and reporting.
· Implemented unit tests using Pytest and CI in GitLab, using Git to manage releases.
· Monitored and analysed trading performance using Kibana and Python.

Dragonfly, Southampton   July 2019 - June 2021
Intern - Part-time

· Designed algorithmic trading strategies for cryptocurrency and equity markets.
· Connected trading algorithms and reporting to various exchanges using Websockets and REST APIs in Go and Python.
· Performed data analysis using SQL, BigQuery and Python (Pandas and Matplotlib).
· Assisted in running an algorithmic trading competition at the University of Southampton.