Dr. Matt Amos

Applied data scientist

matt.r.amos@outlook.com
github.com/mattramos
mattramos.github.io
+44(0)7563905176

An experienced data scientist passionate about solving important interdisciplinary challenges. Quick learner with a strong background in machine learning, statistics, physics and climate science. Motivated by tricky problems and working with others for the good of people.

Computing and Coding

Skilful and experienced with a typical Python and ML development tech stack. Please click links provided for examples.

- **Code:** VSCode, git, conda, UNIX, pytest
- **ML:** tensorflow, JAX, GPflow, sklearn
- **Big data:** xarray, dask, pandas/polars, geopandas, SQL
- **Cloud:** GCP, AWS
- **Viz:** Plotly, matplotlib, dash, seaborn, blender, Adobe Illustrator
- **Publishing:** Github, binder, latex,
- **Distributed computing:** SLURM, LSF on large computing clusters

Statistics and Machine Learning

Accomplished statistician producing innovative machine learning solutions.
Particularly knowledgeable in:

- Bayesian neural networks (deep learning)
- Hierarchical and sparse Gaussian processes
- Model ensembling
- Hybrid modelling
- Bayesian inference
- Geospatial methods
- Time series analysis
- Optimal transport
- Time-frequency analysis
- Generative adversarial networks

Responsibility and Mentoring

- Manage and complete interdisciplinary research
- Data manager on a petascale compute platform
- Maintaining open-source software
- Communicating complex ideas to non-experts
- Taught machine learning, data analysis, maths and atmospheric science
- Co-organiser of a coding support group
- Peer reviewer for Nature, GMD, JGR
- Designed and risk assessed data campaigns
- Mentored postgraduate data science students
- Led and instructed hundreds of young adults in high risk outdoor activities

Employment and Education

Senior Research Associate in Maths and Stats at Lancaster University (2021- Present)

- Leading independent and collaborative research to build state-of-the-art models for applications in climate and air quality

PhD in Atmospheric Data Science

- Built custom data science tools for climate and atmospheric sciences

MPhys in Physics (First class)

- Research into oceanic rogue waves using time-frequency analysis

Notable Outputs

- Published machine learning research in NeurIPS on both Gaussian processes and neural networks
- Maintain an open-source Python package for Bayesian model ensembling
- Attracted $10000 funding from Google to explore Bayesian neural networks and GANs
- Produced innovative applied data science research in Environmental Data Science, Atmospheric Chemistry and Physics, Ecology and Evolution
- Contributing author on the World Meteorological Organisation's Ozone Assessment report
- Team leader on a CMIP6 (climate model data) hackathon