

SAAM NAZEMPOUR

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EDUCATION

UNIVERSITY OF CAMBRIDGE

Oct 2024 – Jun 2025

MPhil - Data Intensive Science

Select Courses: Machine Learning and AI, Deep Learning, Research Computing, Statistical Data Analysis, Further Statistics (Bayesian), Software Development

Grade: Distinction (76%)

IMPERIAL COLLEGE LONDON

Oct 2020 – Jun 2024

MSci - Physics

Select Courses: Computational Physics, Quantum Field Theory, General Relativity, Quantum Optics, Quantum Physics, Advanced Classical, Mathematical Methods, Differential Equations, Vector Calculus

Grade: 2:1 (65%)

WOODHOUSE COLLEGE

Sep 2018 – Jun 2020

A Levels: Maths (A*), Further Maths (A*), Physics (A*)

WORK EXPERIENCE

Lloyds Banking Group (LBG)

Sep 2025 – Present

Data Science & AI Graduate (ML/AI Engineer)

- Contribute to the development of the GenAI team's RAG solution:
 - Design and deploy Kubeflow components and orchestration pipelines.
 - Evaluate chunking strategies and retrieval algorithms to optimise context relevance.
 - Develop front-end interfaces in HTML and Plotly Dash for internal users.
 - Architect configuration systems using Pydantic BaseSettings and YAML sources.
- Prompt engineering for the LLM workflows, improving response accuracy and reliability.
- Built evaluation pipelines for the RAG system using Ragas and internal libraries, incorporating AI-as-judge frameworks and human review to inform model iteration and performance improvement.

UBS

Jun 2023 – Aug 2023

Quant Summer Analyst

- Developed a dashboard for the ACQA platform to provide traders with quantitative comparative analytics using classical statistical techniques.
- Designed a computational model to visualise the dynamics of trading metrics (Greeks), analysing sensitivity to market movements.
- Developed an iterative solver to optimise barrier levels/rebates for custom structured products.
- Back-tested a spread strategy for a custom structured product over a 10-year period, delivering findings through a presentation slide, which was integrated into the monthly pack used by sales.

SELECT ACADEMIC PROJECTS

- LoRA-Tuned LLMs for Time-Series Forecasting:**
Fine-tuned Qwen2.5-0.5B-Instruct using LoRA to forecast nonlinear Lotka–Volterra predator-prey dynamics, implementing LLMTIME-style tokenisation, autoregressive generation, hyperparameter tuning, and FLOPs budgeting; achieved median $R^2 > 0.85$ within compute constraints.
- Bayesian Inference with JAX/NumPyro:**
Built a Bayesian inference pipeline to estimate the original hole count of the Antikythera mechanism using MLE, HMC/NUTS, posterior predictive checks, residual analysis, and WAIC model comparison across isotropic and radial-tangential noise models.
- Radiomics, Feature Selection and Model Explainability:**
Developed end-to-end radiomics workflows across photoacoustic and CT imaging, combining ANOVA sensitivity analysis, feature selection, machine learning classification, SHAP explainability, and robustness testing across repeated seeds.

TECHNICAL SKILLS

Python | SQL | GCP | CI/CD | NLP | Kubeflow | Git | Bash | Jupyter | Statistical Analysis | Machine Learning