

## EDUCATION

**MSc. Statistics, University of Nottingham**

September 2023 - September 2024

Relevant Modules: Statistical Machine Learning, Time Series & Forecasting, Computational Statistics, Classical and Bayesian Inference

**BSc. Economics and Mathematics, University of Bath**

September 2019 - June 2023

Relevant Modules: Linear Algebra, Markov and Stochastic Processes, Statistics, Probability and Econometrics

## SKILLS

<b>Programming skills</b>	Python (Scikit - Learn, PyTorch, PySpark, TensorFlow), R
<b>Software and Tools</b>	SQL, AWS, Snowflake, Docker, Spark, PowerBI, Bloomberg, Git, Excel

## ACADEMIC RESEARCH & PROJECTS

**Adversarial Robustness of Rate – Encoded Spiking Neural Networks | Paper**

- Explored robustness to attack of several types of rate - encoded Spiking Neural Networks (SNNs) for MSc. thesis
- Leveraged PyTorch framework to construct SNNs subject to various white box (FGSM, PGD) and black box (Pixle method) attacks
- Contributed novel insights to AI Safety research concerning adversarial robustness of SNNs when neuron type is varied

**Diagnosis of heart conditions from ECG data, a classification problem | Paper**

- Utilised Random Forest (RF) model in R to diagnose heart conditions from ECG data, leveraging RF for precise medical diagnostics
- As a team, engineered model which reduced diagnostic turnaround time, enhancing patient care in clinical settings
- Developed efficient workflow integrating data preprocessing, feature selection, and model training on patient ECG data

**Designing a model for prediction of train delays to Nottingham Station, via Random Forest | Paper**

- Engineered predictive Random Forest model in R capable of providing accurate estimations of train delay
- Facilitated improved management of train schedules, staffing, and infrastructure maintenance in Nottingham to minimise delays

**Evaluation of the effectiveness of Support Vector Machines (SVMs) in classification problems | Paper**

- Analysed how SVMs effectively separate data using linear and kernel-based techniques, focusing on margin-based classification
- Demonstrated superior results on dataset using kernel based SVMs, highlighting strong performance above well-known methods

## EXPERIENCE

**Data Scientist Intern**

September 2024 — Present

*Ardian*

*London, UK*

- Deployed RAG-based application, leveraging LLMs, leading to time savings of 10+ hours on report writing tasks for team members
- Developed advanced custom chunking and prompt engineering methods, with rigorous RAG evaluation pipeline for monitoring
- Leveraged statistical (ARIMA) and machine-learning based (XGBoost, Random Forest) approaches for time series forecasting

**Global Markets Summer Analyst**

June 2022 — August 2022

*Credit Suisse*

*London, UK*

- Developed novel visualisation tool with Python (pandas, plotly) for analysis of equity data for Equity Resource Management team
- Rotated across High Yield Credit Trading, Equity (Cash) Trading and Equity Resource Management trading desks
- Pitched and researched equity trade idea to a panel of 12 Managing Directors, achieving 'AA' rating ('AAA' being the highest)

**Data Analyst**

January 2022 — May 2022

*Expedition Growth Capital*

*London, UK*

- Implemented web information retrieval tool in Python (Jupyter), enhancing efficiency by saving up to 3+ hours daily on web search
- Pitched and presented investment strategy in Blockchain and Web3 space to team members, simplifying various complex ideas
- Led process in sourcing and recruitment of high-quality executive becoming board member at a portfolio company of the fund

**Quantitative Research Intern**

July 2021 — August 2021

*Point72 Asset Management*

*London, UK*

- Analysed structure of currency data with Python (pandas), developing quantitative trading strategies for currency products
- Developed application using SQL to analyse bond data, for visualisation in Microsoft PowerBI and Tableau
- Internship within FX Options trading pod, building quantitative trading strategies for foreign exchange products

## INTERESTS

**Brazilian Jiu - Jitsu**

Undergoing intensive competitive training for inter – club competition

**Comedy writing and acting**

Produced, wrote and acted in 5 – act comedy show to audience of 200+ whilst studying at university