Mayuran Visakan

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EDUCATION

- **Imperial College London** | MSc. Statistics *(Distinction)*   **Oct 2023 – Sep 2024**
  - **Modules Include**: Computational Statistics, Advanced Statistical Finance, and Machine Learning
  - **Thesis**: Repurposing stochastic volatility models (e.g. Heston's) from derivative pricing to volatility forecasting

- **University of Cambridge** | BA. Mathematics *(Class II.1)*   **Oct 2019 – Jun 2022**
  - **Modules Include**: Statistical Modelling, Principles of Statistics, Mathematics of Machine Learning, Applied Probability, Markov Chains, Numerical Analysis, Quantum Mechanics, and computational mathematics projects
  - **Positions**: Fitzwilliam College Student Body (JCR) Vice-president (2021) and Treasurer (2020); BP Scholar

- **Birkdale School, Sheffield** | Year 9 – Year 13   **Jul 2014 – Jul 2019**
  - **GCE A-Level (2019)**: 4 A*s in Further Mathematics, Mathematics, Physics, and Chemistry; A* in EPQ
  - **Further Exams**: S,1 in Cambridge STEP 2 and 3 exams (2019); 7 A*s and 3 Grade 9s in GCSEs (2017)
  - **Prizes & Competitions**: Dux Academicus Prize – *Best senior academic performance (2019)*; British Mathematical Olympiad – *Distinction (2019)*; Intermediate Mathematical Olympiad – *Distinction (2015), Gold medal (2017)*; Physics Olympiad – *Gold (2019)*; Oxford TCS Challenge – *Distinction (2019)*

EXPERIENCE

- **Typetone** | Machine Learning Intern   **Apr 2024 – Oct 2024**
  - Evaluation and improvement of state of the art large language model (LLM) performance for natural language processing (NLP) tasks including advertising text quality.
  - Researched qLORA and direct preference optimisation fine-tuning methods, and curated a training dataset.
  - Explored hallucination, faithfulness and self-consistency to ensure output accurately aligns with prompts.
  - Web scraped client sites to automatically capture relevant information about the business.

- **Civil Service Fast Stream** | Operational Research Analyst   **Jul 2023 – Sep 2023**
  - Modelled in-depth risks to Ministry of Justice budget from inflationary pressures on multimillion-pound contracts.

- **University of Sheffield ACSE** | Research Assistant   **Nov 2022 – Jul 2023**
  - Used time-series modelling for estimation and forecasting of economic indicators and health outcomes in UK areas.
  - Implemented an open-source python model to perform inference under policy intervention scenarios.

- **Maven Securities** | Options Market Making Intern   **Jun 2021 – Aug 2021**
  - Studied options theory and market-making including pricing models, the greeks, and arbitrage conditions.
  - Within a simulation, traded options on the Euro Stoxx 50 Index requiring fitting a volatility surface to a range of strikes and expiries, managing hedges and portfolio risk limits, and considering market news to swiftly respond.
  - Completed two projects for assistive tools used by traders: a portfolio risk sheet simulating the wake of market events; and a live script breaking down PnL of given reference options to compare and evaluate trading decisions.

- **GCHQ** | Cyber Security Internship   **Jul 2020 – Sep 2020**
  - Learned cyber-security practices with coding skills, and completed a research project on detecting deepfake images.

- **IMC Trading Competition** | Runner-Up   **Oct 2019**
  - Took part in a workshop on creating a python trading algorithm with an introduction to trading practices.
  - My team came in second place in the final competition where our strategies were run on new data.

PROGRAMMING SKILLS

- **Projects**
  - **Thesis**: Handled (large) financial market data and incorporated implementations of models from recent research
  - **Obsidian Code Styler (Personal)**: Free open-source software plugin for the Obsidian app with 45k downloads

- **Languages:** 🐍 Python *(NumPy, Pandas, PyTorch, TensorFlow, SciPy)*, R, MATLAB, 🇯‌s JavaScript/TypeScript

- **Technical Skills:** 🗄 SQL, ◆ Git, 🄭 Excel, 🇭‌ HTML & 🇨‌ CSS, LaTeX