


ZACHARY TILLER MENG (CANTAB)

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EDUCATION

University of Cambridge | *MEng Information & Computer Engineering*

Oct. 2019 - July 2023

4th Year: Merit, Upper Second Class Honours

Masters Thesis, Pending Publication: "Non-Gaussian Stochastic Processes for Financial & Tracking Applications": Sequential MCMC Particle Filters on Levy-Process-Driven Stochastic State Space Equations on FX data. Derived new modelling parameterisations & closed-form filtering equations

Key Modules: Probabilistic ML, Deep Learning & Structured Data, Statistical Signal Analysis, Computational Stats & ML: Kalman Filter, Linear Algebra & Regression, Neural Networks, Time Series Forecasting (AR, ARIMA, HMMs etc.), Stochastic Modelling, Bayesian Inference

Achievements: Ranked 7th in Year 2 | Queens' Foundation Scholar | Presidents Prize | GPA: 69.8%

Bancrofts School | *Francis Bancrofts' Scholar*

Sept. 2012 - Sept. 2019

A Levels: A*A*A*A* - Maths, Chemistry, Further Maths, Physics | **GCSEs:** 10A*'s

Awards: Silver Cambridge Chemistry Olympiad, UKMT Kangaroo Award

WORK EXPERIENCE

Quantitative Analyst/Researcher, Smartodds

October 2023 - Present

- Research & develop statistical and ML models in R & Python for the sports betting markets to generate alpha
- Conducted EDA on 1+ million football games for model ideation. Targeted specific nuances, behaviours and correlations in the data to derive 6 bespoke PMFs boosting predictive accuracy metrics by over 30%
- Lead greenfield MMA capstone project: data collection, cleaning and storage (SQLite). Model design, training and evaluating, via statistical and deep learning methods and feature engineering to predict fight outcomes

Quantitative Investment Strategy Intern (QIS): Vol Structuring, Macquarie

June 2022 - Aug. 2022

- Integrated an improved PnL Explainer tool (Python) into the intra-day analytics suite for S&P and Eurostoxx strategies, requiring quick understanding of Macquarie's codebase. Presented to 50+ colleagues
- Refined Delta Hedging PnL calculations from 3 d.p to 8 d.p accuracy & analysis of Greeks for any time horizon
- Wrote Python scripts to visualise the PnL breakdown of the VRP algorithmic strategies for the desk & clients

Machine Learning & AI Intern (Part-Time), Memento VR

Aug. 2021

- Generated 14,800 labelled snaps from a video to use in a multi-output CNN to predict gyroscopic parameters
- Built a sign language recogniser (CNN), using dropout, regularisation, and data augmentation techniques

Jane Street · McKinsey & Co, Spring Intern

April 2021

PERSONAL PROJECTS

Snooker Sports Betting Model [Live]

- End-to-end Tensorflow model with automatic data collection, retraining schedule, live bet suggestions, and user interface. Developed with project partner to make 10% ROI in 2 months

"Mark Mate": AI Marking Assistant

- Collaborated with a stranger to build a full-stack (React, JavaScript, Python) app in 36 hours at a hackathon, utilising LLMs, NLP & prompt engineering, to provide teachers with an AI-driven marking assistant

iOS/Android App Development [Ongoing]

- Creating a product to innovate outdated Football "Survivor" games played in WhatsApp chats of 300+ people
- Leveraging Firebase for back-end scalability, optimising interactions for API-cost efficiency, and implementing advanced features (custom hooks, cloud functions) for improved user experience and secure data handling

EXTRA-CURRICULAR ACTIVITIES & ACHIEVEMENTS

Mentor and Coach, Universify

Oct. 2020 - July 2021

- Year long coach for 2 Year 11 students from disadvantaged backgrounds, helping them work toward University
- Led classes of up to 20 students for a week during the online summer school, collaborating with 15 volunteers

Treasurer, CATS Society Cambridge University

Oct. 2020 - July 2021

- Coded a program (Python) to automate managing formal accounts with over 200 transactions a year
- Took initiative to modernise the accounting documents & database by re-drafting into a clearer format

Lead Student Consultant, Unlock Consultancy

Oct. 2020 - Nov. 2020

- Directed a global team over 3 time-zones on a tech consulting project for 6 weeks, delivering a 40-slide report
- Leveraged skills in cloud-based software to ease project management and delivery, saving c.10 hours a week

INTERESTS | Arsenal FC, Scuba Diving, (Amateur) Poker, Football (Queens College 2XI), Hiking (Gold DofE)