




NICHOLAS WONG

MATHEMATICS HONOURS STUDENT

CONTACT

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QUANTITATIVE SKILLS

Strong command of R and Python for statistical analysis, model development, and optimisation in financial contexts. Proficient in leveraging tools such as NumPy, Pandas, and ggplot2 to analyse large datasets and build predictive models for trading environments. Efficient in building and optimising financial models using Monte Carlo Simulations and time series forecasting.

Mathematics

- Probability and Stochastic Processes
- Statistical Inference and Machine Learning
- Optimisation Techniques
- Stochastic Calculus

Programming

- R (Tidyverse, ggplot2, glmnet, survival, caret)
- Python (NumPy, Pandas, Matplotlib, SciPy)
- C
- VBA

Additional Courses

- Udemy – The Complete Python Course
- Udemy – Python for Data Science and Machine Learning

VOLUNTEER EXPERIENCE

IDMC SYDNEY

- Operations Director
2023 – Present
- Young Adults Leader
2023 – Present
- Productions Director
2019 – 2022

ACTUARIAL SOCIETY OF UNSW

- Events Portfolio
2022
- Careers Portfolio
2021

EDUCATION

UNIVERSITY OF NEW SOUTH WALES

2021 - Present

Bachelor of Actuarial Studies / Bachelor of Advanced Mathematics (Honors)

- Distinction Average with a WAM of 81
- Honours Year (2025) on Stochastic Treatment of Sharpness-Aware Minimisation. Conducting research in robust optimisation algorithms, and studying the stochastic treatment of novel optimisation techniques with promising improvements to the generalisation of various machine learning models such as neural networks
- Coursework: Computational Mathematics for Finance (92), Statistical Inference (96), Statistical Modelling (90), Statistical Machine Learning (84), Differential Equations (93), Asset Liability and Derivative Models (86), Linear Models (87), Probability and Stochastic Processes (79), Bayesian Inference (NA), Actuarial Data Science (NA)

UNIVERSITY OF SYDNEY

2020 - 2021

Bachelor of Science / Bachelor of Advanced Studies

- Dean's List of Excellence in Academic Performance
- High Distinction Average with a WAM of 87
- Coursework: Linear Algebra (89), Probability and Statistics (93), Multivariable Calculus (92)

EXPERIENCE

VICTORIAN ROAD FATALITIES MODEL

- Constructed and optimized Generalised Linear Models (GLM) using VicRoad data to identify patterns in fatal accidents, applying oversampling techniques, subset selection, and regularisation to achieve a F1 score of 0.81 and actionable insights
- Utilized R to process large datasets and ensure model robustness, with a strong focus on deriving predictive analytics, and effectively addressing a highly imbalanced dataset (1.7% positive class)

FETCH PET INSURANCE PRICING

- Collaborated in a team of 5 to design a pet insurance model for an upcoming startup, utilizing Generalized Additive Models and XGBoost for technical pricing and data analysis. Achieved a Mean Absolute Percentage Error (MAPE) of 10%, ensuring precise pricing predictions to support strategic decision-making.
- Utilised various unique data types and sources such as shapefiles, socioeconomic data and geographic data to improve our feature engineering processes.

MARKOWITZ PORTFOLIO THEORY FOR EQUITIES

- Implemented modern portfolio theory and Capital Asset Pricing Models (CAPM) for creation of tangency portfolios using multivariate optimization and financial data from TSE and Vietnamese equities.
- Applied VBA and multivariate optimisation theory to identify pricing mismatches, similar to discovering arbitrage opportunities in financial markets.

PRIVATE TUTORING

2020 - Present

Tutored 30-35 selective high school and university students in Extension I, Extension II Mathematics, Physics and First Year Undergraduate Mathematics. Managed clients across Sydney, producing students landing offers from top Universities.

ACTUARIAL SOCIETY OF NEW SOUTH WALES

2021 - 2023

Organised various careers and social events as part of the Actuarial Society of UNSW to support student actuaries find community and opportunities.

- Peer Mentor (2022 and 2023)
- ASOC & SIG Poker Night First Prize (2021 and 2022)
- Managed Taylor Fry Case Competition (2021), Quantum Problem Solving Challenge (2021), Industry Mentoring (2021), ASOC Mock Interviews (2021)
- Authored ASOC Careers Guide (2021)