

Tay Yong

[Email](#) | [LinkedIn](#) | [GitHub](#)



PERSONAL STATEMENT

Mathematics and Data Science undergraduate at NUS with strengths across quantitative research, machine learning, and analytics engineering. Comfortable moving between rigorous mathematical work — probability, statistics, and lattice-based cryptography research — and shipping production tooling in Python and SQL, owning problems from definition through deployment. Additional experience founding and leading a 4-person startup team. Seeking quantitative, data science, machine learning, or research roles.

EDUCATION

NATIONAL UNIVERSITY OF SINGAPORE

Bachelor of Science (Mathematics, Data Science and Analytics)

Grade Point Average (GPA): 4.23/5.00

August 2023 –
May 2028

WORK EXPERIENCE

AI Engineer, Data Analyst and Operations Intern, ONDO (New York-based sustainable DTC brand)

- Own AI and automation projects end-to-end, from problem framing and data analysis through to deployment.
- Built and deployed internal Slack bots in Python (Klaviyo waitlist notifier, daily sales summary) on scheduled Railway cron jobs.
- Prototyped new features for the team, including a competitor intelligence dashboard (React, Recharts) and Shopify Flow automations.

August 2026 –
Present

Research Intern (Lattice Cryptography), DSO National Laboratories (Singapore's largest defence R&D organisation)

- Empirically tested the heuristic assumptions underpinning the ADPS 2016 primal-attack BKZ security estimate for Kyber/ML-KEM, the NIST post-quantum encryption standard, and co-authored the resulting research paper.
- Applied pure mathematics — lattice theory and the geometry of numbers, abstract algebra, and probability theory — to formalise and stress-test assumptions including the Gaussian Heuristic and the Geometric Series Assumption.
- Owned the research cycle end-to-end: literature review, hypothesis design, large-scale experiments, and a documented 15+ script handoff codebase.

May 2026 –
August 2026

Business Analyst Intern, Shopee (Southeast Asia's largest e-commerce)

- Designed and maintained SQL-based dashboards tracking first mile delivery KPIs across 5 Southeast Asian markets, surfacing operational gaps that reduced average delivery time.
- Built performance segmentation frameworks that standardised how the team sizes, prioritises, and compares features across markets; identified first/last mile speed and cost optimisations.

January 2026 –
April 2026

Artificial Intelligence, Data Science and Machine Learning Intern, Singtel (Singapore's largest telco provider)

- Analyzed 10M+ row customer datasets in PySpark and Databricks to identify churn risk segments, informing a retention campaign targeting 50K+ subscribers.
- Built and validated a churn prediction model from scratch (feature engineering, tuning, testing); mutual information gain analysis ranked engineered features among the top ~50 most informative predictors.

May 2025 –
August 2025

PROJECTS

Founder and Project Lead, Health and Tech Startup (Self-Initiated)

- Founded and led a 4-person engineering team to design and ship an MVP gamified fitness and nutrition app, defining technical architecture, sprint priorities, and feature roadmap from ideation to deployment.
- Defined product vision, translated ideas into technical requirements, and drove product, growth, and partnership strategy ahead of launch.

March 2025 –
Present

Cointegration Pairs Trading (MA-V), Walk-Forward Backtest - Python (Self-Initiated)

- Engineered a cointegration-based pairs trading strategy in Python (Engle-Granger test, dynamic z-score entry/exit signals, risk controls).
- Built an automated walk-forward process to avoid overfitting; on unseen 2016–2025 data the best setting held up after costs and under higher-fee stress tests.

June 2025

Natural Language Processing - Sentiment Analysis (School)

- Directed text data preparation using TF-IDF vectorization, with data cleaning, normalization, and tokenization to improve feature representation and input efficiency.
- Assessed the impact of different model and vectorization approaches across themes, using word clouds to detect sentiment patterns; boosted model accuracy beyond 80%.

April 2024

EXTRACURRICULAR ACTIVITIES

Vice Director, Statistics and Data Science Society Datathon

- Owned the society's annual Datathon end-to-end (100+ participants): scoped the challenge, curated the dataset, built reference answers, and executed the event.

September 2024

SKILLS

- Technical: Python (Pandas, NumPy, Matplotlib, PySpark), SQL, R, JavaScript/Node.js, React, Java, Swift, MATLAB, VBA, LaTeX, Databricks, Tableau, Power BI, Shopify, Klaviyo, Railway
- Languages: English, Mandarin | Hobbies: Fitness (Strength Training, Climbing, Running), Music Production, Reading