

# ALLEN LU ZHAO QUAN

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## EDUCATION

**Nanyang Technological University (Data Science and Artificial Intelligence)**

**Aug 2023 – Dec 2027**

*Bachelor of Science with Honours*

- Cumulative GPA: Second Upper Class Honours (Distinction)
- Relevant Coursework: Data Analytics, Machine Learning, Databases, Calculus, Probability, Regression Analysis, Business Finance

## WORK EXPERIENCE

**PhillipCapital**

**Jan 2026 – Present**

*Intern, Quantitative Risk*

- Enhanced current GLM pricing model (Poisson/Gamma) to quantify rating factor relativities for private motor portfolios, exploring alternative models including Tweedie and GAM, Tweedie model achieved a Gini gain of 0.126, outperforming baseline model
- Designed Monte Carlo simulations to model stochastic claim outcomes for 9,253 motor insurance policies under a Tweedie GLM framework, identifying 99th-percentile loss ratio ~4.54% above expected levels, quantifying portfolio tail risk
- Developed SQL pipelines in Snowflake to compute borrower-level credit metrics (utilisation ratios, working-capital exposure, investment limits) and implemented rule-based classification to surface eligibility signals via Tableau dashboards for loan decisioning

**Adroit Investment Technologies**

**May 2025 – Aug 2025**

*Intern, Strategy & Business Intelligence*

- Researched on emerging AI technologies across various sectors and prepared teasers, industry outlook, statistical reports for prospective clients, achieving 33% increase in client acquisition for the Month of May
- Managed components of financial statements using Power BI including Capital Accounts, Capital Calls, Capital Distribution
- Operated across a full stack of a Learning Management System (LMS) for a children's learning school using Odoo platform, including UI/UX adjustments, business logic workflows, data model configurations. Design shortlisted by CEO to be used as pitching material
- Implemented Excel algorithms to clean and compare 2,000 entries of investment data, enabling strategic report generation and stakeholder-ready insights

**SCAL Academy**

**Jul 2024**

*Intern, Data Analytics & Management*

- Managed and cleaned entries of 1,900 trainees from the Month of April to July 2024 using Excel VBA for generation of certificates
- Developed an automated data entry system optimising mass certificate generation process, resulting in 75% reduction in manhours
- Coordinated Ad-hoc tele calling from clients and trainees, ensuring all disputes and queries were addressed in time and reduced callback rate by 50%

## PROJECTS

**Nanyang Fintech Catalyst FinTech Innovator's Hackathon 2026**

**Mar 2026**

*Github Link: <https://github.com/Darkmatter126ms/Wealth-Wellness-Hub>*

- Built a research-calibrated, risk-adaptive financial wellness scoring model using CRRA utility and AHP-based factor weighting to quantify portfolio health across liquidity, diversification and growth, with profile-specific non-linear scoring derived from investor risk tolerance

**Data Decomposition using Clustering Analysis**

**Aug 2025 – Nov 2025**

*Github Link: <https://github.com/Darkmatter126ms/Data-Decomposition-using-Clustering-Analysis>*

- Applied K-Means, K++-means, Agglomerative and Gaussian Mixed Models to decompose high-dimensional datasets, analysing cluster stability, probabilistic membership, and regime segmentation
- Evaluated model performance including Silhouette Score, Davies–Bouldin Index, Inertia, emphasising model assumptions and limitations

**Morgan Stanley CodeToGive Asia Hackathon 2025**

**Aug 2025**

*Github Link: <https://github.com/Darkmatter126ms/CodeToGive>*

- Enhanced a Donation dashboard to streamline donations, reduce donor attrition and improve outreach. Project shortlisted for overall Top 4
- Developed AI-powered donor badge generation by integrating SiliconFlow API, programmatically generating a custom badge in <4 seconds

**Dense Video Captioning**

**Jan 2025 – Mar 2025**

*Github Link: <https://github.com/Darkmatter126ms/MediaAnalysis-DenseVideoCaptioning>*

- Implemented a dense video captioning system using CLIP for visual feature extraction and vid-2-seq sequence-to-sequence model to generate temporal video descriptions. Project attained Grade 5 (Equivalent to A/A+ under the Singapore GPA system)
- Evaluated model performance using METEOR and CIDEr metrics via controlled ablation studies to quantify gains from multimodal inputs

## EXTRA-CURRICULAR ACTIVITIES

**Nanyang FinTech Catalyst (NFC)**

**Aug 2025 – Present**

*Analyst-In-Training, Quantitative Research*

- Spearheaded a team project on pricing strategies using mathematical models by developing a Beta Estimator via OLS regression and constructed a mean–variance portfolio optimiser. Max–Sharpe strategy achieved 4.45% increase in Sharpe ratio compared to Naïve strategies
- Designed and evaluated alpha signals on BrainQuant using historical equity data incorporating factor transformations, signal decay, and risk neutralisation

## SKILLS & INTERESTS

**Languages:** English, Chinese (Native or Bilingual Proficiency), Italian (Limited Working Proficiency)

**Skills:** Microsoft Office (Excel, PowerPoint, Power BI), VBA, Bloomberg Terminal, Capital IQ, Financial Modelling, Options Straddles, Python (libraries), SQL, C, R, Java, C++, JavaScript, PyTorch, Spark, JSON, Feather, N8n, Airtable, Snowflake, Tableau

**Certifications:** Solving Ordinary Differential Equations with MATLAB (MathWorks), Vector Calculus for Engineers (HKUST)

**Interests:** Gym, Volleyball, Basketball, Tennis, Poker & Mahjong, Probabilistic Thinking, Debate, Western Culinary, FX, Defi, Equities

**Favourite Books:** Thinking in Bets (Annie Duke), One Up on Wall Street (Peter Lynch)