Chan Yi Heng

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Education

Singapore University of Social Sciences — Singapore, SG
Bachelor of Science (Honours) in Mathematics — *Jan 2022 – Dec 2025*

Singapore Polytechnic — Singapore, SG
Diploma in Banking & Finance — *Apr 2016 – Mar 2019*

Experience

Research Intern — Nov 2024 – Aug 2025
*A*STAR, Advanced Remanufacturing and Technology Centre* — *Singapore, SG*

- Awarded the A*STAR Research Internship Award.
- Developed deep learning time series models to forecast demand for Fast-Moving Consumer Goods (FMCG), significantly improving the accuracy of an end-to-end inventory management system.
- Engineered and deployed a reusable internal library for Explainable AI (XAI), integrating SHAP analysis to interpret model predictions and enhance transparency in supply chain decision-making.
- Contributed to the ”Data-Driven Framework for Enhancing Supply Chain Resilience” project by reproducing and refining the model architecture from a key research paper on deep learning for inventory management.

Finance Operations Assistant — Sep 2021 – Dec 2021
Indeed — *Singapore, SG*

- Executed the successful migration of Japanese entity accounts, ensuring alignment with international accounting standards and local regulatory requirements.
- Managed and reconciled financial records for Japanese corporate entities, leveraging advanced accounting software to ensure data integrity and consistency.
- Processed cross-departmental financial transactions using Salesforce, collaborating with internal stakeholders to improve processing time and accuracy.
- Designed and implemented interim communication workflows to resolve process bottlenecks, significantly enhancing team efficiency and productivity.

Unit Finance Specialist — Aug 2019 – Dec 2021
Singapore Armed Forces — *Singapore, SG*

- Oversaw unit financial accounts via a central government procurement system, providing strategic advice on operational and welfare purchases to optimize resource allocation.
- Enforced procurement policy compliance across all HQ sub-units through effective collaboration with finance stakeholders, strengthening adherence to regulations.
- Conducted bi-annual internal audits and Risk Internal Control Evaluations, delivering comprehensive reports and analyses to unit leadership for governance improvements.
- Proposed and implemented enhancements to the unit’s finance governance framework, measurably improving system discipline and operational controls.
- Administered the COVID-19 Taskforce budget with finance clerks and officers, ensuring precise and timely processing of all financial transactions during a critical operational period.

Wealth Management Intern — Sep 2018 – May 2019
DBS Bank — *Singapore, SG*

- Validated Accredited Investor documentation to ensure full compliance with regulatory requirements and internal risk management policies.
- Partnered with Front Office relationship managers to execute service requests for Private Banking clients, ensuring timely and accurate resolution.
- Documented and maintained transaction records for high-net-worth clients, ensuring the integrity and reliability of all financial documentation.
- Analyzed operational data to identify system enhancement opportunities, presenting actionable solutions to the Team Lead to improve process efficiency.

Research

Multivariate Time Series Forecasting for Equity Price Prediction | *Dr. Zhou Tianyi* Jan 2025 – Nov 2025

- Designed and executed a three-tiered forecasting framework to predict multi-horizon stock returns (1, 5, 20-day) for a diverse portfolio of NYSE-listed equities representing various market sectors.
- Benchmarked a suite of classical (ARIMA), deep learning (LSTM), and modern Transformer-based (PatchTST, N-HiTS) models in both univariate and multivariate settings to evaluate the impact of exogenous features.
- Engineered a robust feature selection pipeline using an ensemble of XGBoost-based methods (Recursive Feature Elimination, Permutation Importance) and feature stability analysis to identify the most predictive technical indicators.
- Implemented Explainable AI (XAI) techniques using SHAP (SHapley Additive exPlanations) to interpret the complex multivariate models, providing clear insights into how specific market indicators drive predictions.
- Validated model performance using a rigorous walk-forward backtesting framework over a one-year period, assessing aggregated metrics to ensure sector-agnostic robustness.

Data-Driven Framework for Enhancing Supply Chain Resilience | *Dr. Liu Ning* Nov 2024 – Aug 2025

- Engineered and benchmarked two end-to-end (E2E) deep learning models, a Deep Convolutional Neural Network (DCNN) and a Multi-Quantile Recurrent Neural Network (MQRNN), for inventory optimization.
- Demonstrated superior performance of the E2E models, which outperformed the traditional Predict-Then-Optimize (PTO) framework and heuristic policies (Fixed-Order-Quantity, Order-Up-To) in total cost reduction.
- Developed a synthetic data generator to simulate realistic inventory dynamics with stochastic demand and lead times across multiple SKUs and stores, creating a robust environment for model training and evaluation.
- Implemented a DCNN with dilated temporal convolutions to capture long-range dependencies and an MQRNN to generate probabilistic demand forecasts, enhancing decision-making under uncertainty.
- Authored a comprehensive 39-page final technical report detailing the research methodology, model architectures, and quantitative results, and delivered monthly progress presentations to the research team.

Competency

Programming Languages & Databases: Python, SQL, JavaScript, HTML/CSS, R
Typesetting & Presentation Tools: LaTeX, Microsoft Office, Google Workspace
Developer Tools: Git, VSCode, Visual Studio, PyCharm
Language Proficiency: English (Fluent), Chinese, Mandarin (Fluent)