

Zhang Guo Yun

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Education

National University of Singapore, Singapore	08/2025 - 05/2029 (Expected)
Doctor of Philosophy in Operations Research and Analytics	
• Coursework: Stochastic Processes, Robust Optimization, Econometric Analysis	
National University of Singapore, Singapore	08/2021 - 05/2025
Bachelor of Engineering in Industrial Systems and Management, Honours with Distinction	
• Specialization: Data Analytics, Minor in Statistics	
• Special Programme: University Town College Programme at Residential College 4 (RC 4)	
Georgia Institute of Technology, USA	01/2024 – 05/2024
BS Industrial and Systems Engineering (Exchange Student)	
• Special Programme: International House	
• Coursework: Statistical Machine Learning, Data Structure and Algorithms, Regression and Forecasting	

Skills

Languages: Python, Java, R, Excel VBA, SQL, HTML, CSS, JavaScript

Technical Skills: Tableau, MATLAB, GitHub, Flask, Hadoop, PyTorch, scikit-learn, React.js, AutoCAD, Flexim, Simio

Experience

Student Researcher, Singhealth Group and Duke-NUS, Singapore	08/2024 - 05/2025
• Researched population models in Singapore using System Dynamics methodology	
• Led a team of four in analyzing Hospital at Home and Telemedicine concepts; developed a robust Stock and Flow Diagram to model stakeholder interactions 100 years into the future	
• Produced a population model exhibiting trend alignment with projections from Singapore's Ministry of Health	
• Advisor: Professor Sean Lam Shao Wei, Dr Ashish, Dr Wang Zhi Guo	
Student Researcher, A*STAR and NUS, Singapore	05/2024 – 05/2025
• Explore the nature of Large Language models(LLMs) applications and the intersection with Operations Research (OR) to address inefficiency among engineers and managers	
• Evaluated multiple LLMs on real-world OR problems; identified and validated Deepseek-R1 as the most effective model for OR-related tasks	
• Poster presentation at INFORMS Annual Meeting 2025	
• Advisor: Professor Qin HanZhang, Dr Yang Shan Shan	
Research Assistant, A*STAR, Singapore	08/2024 – 12/2024
• Identified limitations in the existing demand forecasting approach at A*STAR's Advanced Manufacturing Department, which relied on a simple linear regression model	
• Implemented NIXTLA and advanced Time series algorithms to forecast annual production demand with 85% accuracy	
• Analysed forecasted data and integrated market indicators to enhance inventory optimization for clients	
• Advisor: Dr Yang Shan Shan, Dr Liu Ning	
Finance Intern, Bank of Communications, China	05/2024 – 07/2024
• Calculated key metrics, including Debt Service Coverage Ratio to evaluate loan repayment capacity	
• Analyzed profitability, liquidity, and solvency ratios to assess borrowers' financial health	
Industrial Engineer Intern, Applied Materials, Singapore	07/2023 – 12/2023
• Planned and evaluated machinery assembly processes; used SQL and Python to trace cleanroom inefficiency , identifying over 132 hours/day of machinery idle time and transitioning workflows from Excel to SQL	
• Developed a space management plan, and analyzed area utilization using AutoCAD and Excel	
• Developed a dashboard incorporated HTML, CSS and Flask to visualize the quarterly demands for the Worldwide Operations team in the Singapore branch	

Research Assistant, NUS, Singapore

05/2023 – 07/2024

- Developed **mixed regression models** to assess the Early Warning Financial Risks for 1161 Tech Companies in China
- Identified **Return on Equity** as the most significant predictor and achieved a **70%** prediction accuracy
- Advisor: Professor Poh Kim Leng

Supply Chain Intern, DHL, Singapore

05/2022 – 07/2022

- **Analysed** and **optimized the layout** and efficiency of worker allocation and time allocation for material replenishment in the Singapore Airport Terminal Services using **Excel and AutoCAD**
- Achieved a **15%** improvement in operational efficiency

Teaching Assistant, NUS, Singapore

- 2023, 2025: IE2111 Engineering Principles & Practice II
- Delivered tutorials on **Financial Engineering** and risk forecasting methods for a cohort of **120** students
- **Independently** prepared curated materials for weekly tutorials and lab sessions using **Excel VBA and Python**
- **Nominated** for the **NUS Teaching Awards** for **excellence** in instruction and support

Projects

ML Student Researcher, Georgia Institute of Technology, USA

01/2024 - 05/2024

- Investigated **non-Gaussian** noise distributions in regression models, including **Beta and Laplace distributions**, using **Mean Squared Error(MSE)** as the evaluation metric
- **Demonstrated** that uniformly distributed noise yields the lowest MSE of **2.01**, outperforming Gaussian assumptions in specific cases

Student Researcher for Operations Research I, NUS, Singapore

08/2022 - 12/2022

- **Led** a **7-member** team to evaluate NUS's module allocation system using linear programming
- Simulated the allocation process with **85%** accuracy compared to the actual system

Independent Software Development Project(Orbital), NUS, Singapore

05/2022 - 08/2022

- Developed a web application using **React** architecture to assist Chinese students in purchasing air tickets during the COVID-19 pandemic
- Achieved project certification at **Level Gemini**, demonstrating advanced proficiency

Student Researcher for Financial Engineering, NUS, Singapore

01/2022 - 05/2022

- Analyzed **job placement strategies** for NUS Bachelor of Business Administration graduates using Python, Excel, and @Risk
- Performed in-depth **financial analysis**, including cash flow modeling, sensitivity analysis, and stochastic dominance evaluation

Leadership, Extra-Curricular And Volunteering Activities

Peer Supporter, RC4, NUS

08/2021 - 05/2023

- Provided **counseling services** to support the **well-being** of **250** students residing in RC4
- **Organized** mental health events aimed at **stress relief and promoting student wellness**

Beach Cleaning Day Project Director, NUS

03/2022 - 09/2022

- **Led** a team of **20** members and coordinated with the **National Parks Board** to organize a beach clean-up involving **60** participants
- Collected over **50** kg of waste as part of **environmental sustainability efforts**

ISE Freshmen Orientation Camp Vice Project Director, NUS

08/2021 - 06/2022

- **Led** a team of **40** members to plan and execute orientation activities for **120** incoming students
- **Managed logistics**, developed games, **wrote grant proposals** and **coordinated** with university departments and stakeholders

Awards

A*STAR Graduate Scholarship, A*STAR, Singapore

2024

- Awarded four years of **full funding** for graduate studies in Singapore based on **academic excellence and research potential**