Miranda LU

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CURRENT POSITION

Asia Competitiveness Institute | *Research Analyst* | Singapore 01/2024-now

- ACI Books: Indonesia's Shipping Networks (2025)
- ACI Vertical Projects:
  AI as Cofounder: The Impact of Generative AI on Singapore and ASEAN's New Firm Creation,
  Industrial Clustering and Inter-City Complementarity in the Greater Bay Area,
  Non-Tariff Barriers of RCEP: A Comparative Analysis across FTAs in the Region,
  Labor Market Impacts of the US-Singapore Free Trade Agreement,
  ASEAN's Role in the Global Clean-Tech Supply Chains

WORK EXPERIENCE

Singapore-ETH Centre | *Researcher* | LTA, Singapore 01/2023-12/2023

- Work from Home Preference and Its Impacts on Travel Mode Choice for Commuting Trips

National University of Singapore, Department of Mathematics | *Research Assistant* | Singapore 05/2022-12/2022

- Academic Performance and Module Feedback Modelling

ArkAI Technology Company Limited | *AI Intern* | Ningbo, China 01/2021-05/2021

- Investigated latest deep learning research outcomes and feasibility

Orient Securities Company Limited, The Board Office | *Intern* | Shanghai, China 08/2019-09/2019

- Collected and analyzed performance data including revenues and net profits of securities companies
- Assisted with benchmarking analysis of stock issuance registration system reform

EDUCATION

National University of Singapore | MSc in Statistics 08/2021-01/2023

- Online Study in Essential Numerical Methods for Data Analytics and Financial Engineering during 7/2020
- Core courses: Statistical Foundation of Data Science, Design of Experiments for Product Design and Process Improvements, Nonparametric Regression, Sampling from Finite Populations, Statistical Models, Data Mining, Spatial Statistics, Multivariate Regression Analysis

University of Nottingham | BSc Hons in Mathematics, First-class honors | UK 09/2017-07/2021

- FoSE Summer Mini Semester 2020: training on C and C++
- Core courses: Mathematical Medicine & Biology, Optimization, Modelling with Differential Equations, Fourier Analysis, Mathematical Finance, Metric and Topological Spaces, Stochastic Process

Université Paul-Valéry Montpellier III | France 07/2019-08/2019

- Summer school study in French B2

PAPERS

Tingbin Bian, Zhe Lin Chew, **Miranda Lu**. *Functional Differentiation or Industrial Isomorphism? Testing the Greater Bay Area functional map* (08/2026)

Miranda Lu, Hang Banh. *Non-Tariff Barriers of RCEP: A Comparative Analysis across FTAs in the Region*, presented in RCEP conference (02/2026)

Hang Banh, **Miranda Lu**, Jingting Liu. *Three Years on: RCEP's Promise and Disparities in Regional Trade*, presented in ACI Webinar (09/2025), and in RCEP conference (02/2026)

Miranda Lu, Xin Yi. *Indonesia's Shipping Networks: Connectivity, Supply Chains, and the Strategic Role of West Kalimantan*, presented in ACI Webinar (10/2024), and edited in ACI book, *Shipping Networks of Indonesia* (08/2024)

Miranda Lu, Xin Yi. *The Labor Market Impacts of Intra-Industry Trade: How the US-Singapore FTA Created Jobs in Advanced Manufacturing and Professional Services*, Eastern International University, Vietnam Economics Annual Meeting (12/2024)

Miran Lu. *Work from Home Preference and Its Impacts on Travel Mode Choice for Commuting Trips*

Faith Ka Shun Chan, Fangfang Zhu, Lei Li, **Miran Lu**, Yu-Ting Tang, James Griffiths. *The Champion of Urban Water Resources Management in the Chinese City-the Case of Ningbo*, **icRS Urbanisation**, Ningbo, China (12/2020)

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PREVIOUS PROJECTS

Industrial Clustering and Inter-City Complementarity in the Greater Bay Area | Tingbin Bian 06/2026-08/2026

- Used employment data at two levels of industrial resolution to construct Krugman Specialization Index and Location Quotients for 11 cities in GBA

Non-Tariff Measures of RCEP: A Comparative Analysis across FTAs in the Region | Banh Thi Hang 11/2025-05/2026

- Used Global Trade Alert data to examine trends in NTM implementation and removal across RCEP members and to classify these measures by restrictiveness, type, and affected sector
- Matched each NTM to monthly UN Comtrade data for the period during which the measure was in force

Three Years on: RCEP's Promise and Disparities in Regional Trade | Banh Thi Hang 04/2025-10/2025

- Investigated the tariff liberalization and goods trade since RCEP entered into force
- Constructed tariff margins and trade creation effects across different industries and proposed policy implications

Indonesia's shipping networks, the dynamics of ports and supply chains | Xin Yi 11/2024-03/2025

- Mapped Indonesia's international and domestic shipping networks using provincial trade data from BPS and shipping-route and port-traffic data from IMF PortWatch, disaggregated by trade partner, product, and trade volume.
- Benchmarked West Kalimantan's trade integration, comparative advantages, infrastructure, and workforce conditions against major domestic hubs and comparable resource-rich provinces

Unpacking ASEAN's Role in the Global Clean-Tech Supply Chains | Xin Yi 08/2024-10/2024

- Mapped ASEAN's trade position across electric vehicles (EVs), energy storage, solar panels, and their key upstream components using 2022 UN Comtrade bilateral trade data.
- Assessed value-chain strengths, market destinations, and input dependencies by combining trade patterns with sectoral cost-breakdown evidence from the IEA and IRENA.

Labor Market Impacts of the US-Singapore Free Trade Agreement (USSFTA) | Xin Yi 04/2024-07/2024

- Conducted bilateral trade and employment trends, focusing on knowledge- and technology-intensive industries
- Quantified job creation and mapped the spatial distribution of employment impacts to illustrate policy implications

How Far is ASEAN from Becoming the Next World Factory | Xin Yi 01/2024-03/2024

- Analyzed the competitiveness disparities between ASEAN and China in terms of population demographics, economic strength, and supply chain frameworks dynamics to evaluate ASEAN's potential as a manufacturing hub
- Investigated the maritime indices, such as port throughput and depth, to assess logistical capacities

Work from Home Preference and Its Impacts on Travel Mode Choice for Commuting Trips 01/2023-01/2024

- Utilized Optimal Orthogonal Design in Ngene with 8 blocks to maximize respondent information, by selecting attributes and levels for both WFH and Travel Mode experiments.
- Conducted data collection in Qualtrics from 400 respondents across three subgroups, including current public transportation users, as well as those transitioning from public transport to carsharing and ridesharing
- Employed a joint MNL and Poisson regression model to analyze preferred WFH profiles and the number of WFH days, calculating willingness to pay, marginal utility, and conducting sensitivity analysis for travel mode preferences

Academic Performance and Module Feedback Modelling | Supervisor: Ng Kah Loon 05/2022-12/2022

- Monitored academic progress of students and conducted regression analysis to examine the relationship between students' grades and their demographic information in the context of educational reflections

Data Repository for Single Cell Analytics | Supervisor: Vladimir Brusic 06/2021-07/2021

- Managed single cell transcriptomic information by formatting data (sparse matrix and comma-separated values) obtain from GEO database, standardizing data into one type of cell, and converting the multiple genomic into the common list for quality control and metadata documentation

Heuristic Algorithms for Optimization Problems with Uncertainty | Supervisor: Jiawei Li 11/2020-02/2021

- Optimized cargo shipment and reduced rehandling of containers in Ningbo Port by developing plans for stacking containers of different weights according to commodity attributes, transit time, etc.
- Applied fuzzy set to deriving stacking strategy for containers with uncertain weight information

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Transportation Big Data and Simulation Models-based Safe Travel App During Pandemic 08/2020-09/2020

- Undertook mathematical modeling of infectious disease dynamics and intelligent traffic system simulation for infection prevention and control in Ningbo
- Performed multi-agent simulation, simulated travel situation, interpersonal interaction, epidemic transmission

Prediction on Spread of COVID-19 Through Simulation 05/2020-08/2020

- Simulated the development of COVID-19 with Euler's method in MATLAB to predict trends
- Set original values of susceptible, infected, removed individuals, infection rate and removal rate, calculated the percentages of the infected and of those who needs vaccination to ensure effective control

Blue-Green Infrastructures and Sponge City Developments | Supervisor: Faith Chan 07/2019-08/2020

- Carried out data and text analysis of online sponge city news using NVivo and CiteSpace
- Designed questionnaire and analyzed data to investigate public perception of sponge park in RStudio

Modeling Spatial Distribution of Fishery in 50 Years | *Team Leader*, Supervisor: Kristoffer van der Zee 02/2020

- Collected and cleansed data on global sea surface temperature and fish distribution in MATLAB
- Predicted and visualized movement of Scottish fisheries by establishing Cellular Automata in MATLAB
- Worked out profitable strategies for fishing companies based on optimization model

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HONORS AND AWARDS

2022 NUS Cargill Analytics Innovation Challenge 04/2022
2020-2021 UNNC Outstanding Student 05/2021
2021 Zhejiang Provincial Excellent Graduates, (top 4%) 03/2021
2019-2020 Dean's Scholarship (top 10%) 12/2020
2020 Dream Scholarship Individual Award, UNNC 11/2020
Zhejiang Provincial Government Scholarship (top 1%) 10/2020
Semi-finalist, 2020 Zhejiang Open Data Innovation Contest 09/2020
Finalist, COMAP International Mathematical Contest in Modeling (top 1% out of 13749 teams) 02/2020
Outstanding Teaching Assistant, UNNC International Math Summer School 07/2019
2017-2018 & 2018-2019 Head's Scholarship 04&12/2019
Finalist, National College Students Sudoku Challenge (top 10%) 12/2018
Honorable Mention, 3rd LSCAT Cup College Student Translation Contest in Zhejiang Province 04/2018

SKILLS

- Computer skills: Stata, R, Python, LaTeX, MATLAB, C, C++, NVivo, ArcGIS, CiteSpace
- Languages: Mandarin (Native), English (IELTS: 7.0), French (Advanced: DELF B2)

EXTRACURRICULAR ACTVITIES

Volunteer Service

- Teaching SG in Mayflower Primary School, Singapore 07/2022-11/2022
- Taught English as international volunteer in Chiang Mai Volunteer Project 01/2018

UNNC Model United Nations Association | *Leader of Academic Department* 09/2017-06/2018

- Participated in 7th China University Model United Nations Development and Cooperation Forum as the only delegate from UNNC, organized 3rd Ningbo MUN General Assembly

Hobbies

- Climbing (6th in Kedah Climbing Competition 2022, Malaysia) 06/2022-now
- Rowing (1st in Zhejiang Rowing Competition as UNNC school team member 2021, China) 07/2020-07/2021
- Marathon (participated in dozens of events, Malaysia, China, Cambodia, Singapore) 03/2018-08/2023