Ruey-An Shiu

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https://shiurueyan.github.io/academic-site/

EDUCATION

National Taiwan University, Taipei, Taiwan   Sep. 2021 – (Expected) Jan. 2026

B.S. in Mathematics, B.A. in Economics (Honor), Minor in Computer Science   ***GPA:*** 4.09/4.30

- ***Advisor:*** Prof. Chun-Hsiung Hsia
- ***Thesis:*** On the Synchronization of ReLU Version of Dense Networks

University of California San Diego, California, USA   Fall 2024

University of California Education Abroad Program   ***GPA:*** 4.00/4.00 (Provost Honors)

2025 SLMath Summer Graduate School, California, USA   Jun 9th. 2025 - Jun 20th. 2025

Statistical Optimal Transport (SLMath)

RESEARCH EXPERIENCE

2023 Undergraduate Summer Research Program, NCTS   Summer 2023

- ***Advisors:*** Prof. Gi-Ren Liu, Prof. Yuan-Chung Sheu
- Apply Stein's method to the classical central limit theorem and its generalizations, and further extend its use to non-Gaussian approximations.

Part-Time Research Assistance, Financial Engineering Research Lab, NTUST Aug. 2023 – Now

- ***Advisor:*** Prof. Daniel Wei-Chung Miao
- Topic: Variants of the Jump Diffusion Model.

2023 NCTS Undergraduate Research Program, NCTS   Oct. 2023 – Jun. 2024

- ***Advisor:*** Prof. Chun-Hsiung Hsia
- Provide sufficient conditions for the partially synchronized equilibria of the Rectified Linear Unit version of the Kuramoto model on a dense network.

Part-Time Research Assistance, Institute of Sociology, Academia Sinica Mar. 2024 – Aug.2024

Part-Time Research Assistance, College of Health, Lehigh University   Aug.2024 – Now

- ***Advisor:*** Prof. Hsuan-Wei "Wayne" Lee
- Topics: Complex systems, Computational Sociology, Game Theory, Mathematical Epidemiology.

2024 Undergraduate Research Project Scholarship, NSTC   Jul. 2024 – Feb. 2025

- ***Advisor:*** Prof. Daniel Wei-Chung Miao
- Extend the existing Double Exponential Jump Diffusion Model by incorporating time heterogeneity to show how the jump term parameters change over time, reflecting varying risk across different periods.

Member of the Multi-agent Intelligence and Decision Systems Lab, UCSD   Fall 2024

- ***Advisor:*** Prof. Parinaz Naghizadeh
- Investigate how interconnected social layers influence the speed and stability of consensus by studying equilibrium and convergence dynamics within multilayer network models.

2025 Student Summer Research Fellowship Program, University of Chicago   Summer 2025

- ***Advisor:*** Prof. Haifeng Xu
- To be determined.

CONFERENCE

- **Ruey-An Shiu** and Parinaz Naghizadeh. "Opinion Dynamics in Multi-Layer Social Networks: Consensus and Convergence in Coordination Games." Under review in the *Annual Allerton Conference on Communication, Control, and Computing* (2025).

PUBLICATION

- **Ruey-An Shiu** and Hsuan-Wei Lee. "Shaping network structures in evolutionary games for stronger cooperation." P*roceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences,* accepted with minor revision (2025).

AWARDS

- NSTC College Student Research Creativity Award   2025
- National Taiwan University Bachelor's Thesis Award   2025
- Shih Kung-Sing Outstanding Thesis Award   2025
- National Taiwan University System Beyond Borders Scholarship   2025
- Taiwan Mathematical Society Outstanding Students Prize   2024
- Chow Hung-Ching Scholarship   2024
- Academic Achievement Award (Top 5%)   Spring 2024, Fall 2023
- Finance and Mathematics Joint Scholarship   2023
- National Taiwan University Voyage of Aspirations Scholarship for Exchange Students   2023
- Asian Pacific Mathematics Olympiad (APMO) Bronze Award   2019

TEACHING EXPERIENCE

- **Teaching Assistant,** Stochastic Processes (FIN7050)   Fall 2025, Fall 2024, Fall 2023
- **Teaching Assistant,** Introduction to Ordinary Differential Equations (MATH2217)   Fall 2023
- **Teaching Assistant,** Introduction to Partial Differential Equations (MATH2218)   Spring 2024

COMPUTATIONAL SKILLS / OTHER

- **Programming Languages:** R, Python, C++, MATLAB, Julia
- **Languages**: Mandarin (native), English (fluent)