Chienhsiang Yeh

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Summary

Analytical researcher with proficiency in economics, economic networks, econometrics, and Markov decision processes, demonstrated by a research paper in Q-learning. Eager to leverage knowledge in mathematical modeling, programming, economics, and econometrics in the realm of data science.

Education

- **Australian National University** 2019 - 2024
  Doctor of Philosophy in Economics
  - Focus on economic networks and Markov decision process in economics.
- **Australian National University** 2018
  Master of Economics
- **National Tsing Hua University** 2012
  B.S. in Physics
  B.A. in Economics

Skills

- **Mathematics**: Linear Algebra, Real Analysis, Econometrics, Markov decision process, Probability, and Optimization Methods
- **Programming Languages**: Python, SQL, Julia, MATLAB

Professional Experience

- Tutor at Australian National University 2019 - 2024
  - Delivered tutoring and personal consultations in mathematical methods for economics, econometrics with Python, optimization methods, forecasting by time series with MATLAB, economic growth, and macroeconomics.
  - Led discussions on advanced mathematical methods and economic models.
  - Explain complex economic concepts and methodologies in an understandable manner.
  - Assisted with administrative tasks, including answering emails and managing student records.
- Research Assistant to Prof. John Stachurski 2022
  - Proofread the textbooks "Economic Networks" and "Dynamic Programming."
  - Compiled lecture notes about economic models with Python.

Research Experience

- Dynamic Programming with State-Action-Dependent Discounting
  - Extended dynamic programming theory to incorporate state-action-dependent discounting.
  - Used real analysis, functional analysis, and linear algebra to establish the standard optimality results with "eventual discounting."
- Temporal-Difference Learning with State-Action-Dependent Discounting
  - Extended model-free Q-learning to allow state-action-dependent discounting.
  - Showed the convergences of Q-learning, SARSA, and double Q-learning with state-action-dependent discount factors by Stochastic Approximation Theorem.
- Uniqueness of Equilibria in Interactive Networks
  - Investigated the existence and uniqueness equilibrium in unified static networks covering production and financial networks.
  - Explored an algorithm for computing generalized interbank lending network.
  - Simulate network of clearing payments by Python.
- Explaining Systematic Departures from Gibrat's Law
  - Developed endogenous production networks and computational approaches for achieving equilibrium.
  - Provided explanations for deviations from Gibrat's law and power-law distribution of firm sizes.
  - Simulate equilibrium production network by Python.

Conference Presentations

- The Australasian Leadership Computing Symposium 2023 Canberra
  Harold Zurcher as a Q-learner
- 36th PhD Conference in Economics and Business Perth
  Uniqueness of Equilibria in Interactive Network
- 2022 Society for the Advancement of Economic Theory Canberra
  Uniqueness of Equilibria in Interactive Network