Zhenhao Gong

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Education

University of Connecticut, Storrs, CT

- Ph.D. Candidate, Economics — Expected July 2022
  - Fields of Concentration: Econometrics, Labor Economics, Industrial Organization
  - Dissertation Title: *"Three Essays on Large Panel Data Econometrics"*
- M.S., Quantitative Economics — Expected June 2022

Syracuse University, Syracuse, NY — June 2017

- M.A., Economics

Zhejiang Ocean University, Zhoushan, China — July 2013

- B.A., Economics

Teaching Interests

- Econometrics, Quantitative methods in economics, Machine learning, Forecasting
- Open source programming (i.e. R/Python), Micro/Macroeconomics

Teaching Experience

University of Connecticut, Storrs, CT

Instructor of Record, Feb. 2020 - Present

Undergraduate courses:

Elementary Economic Forecasting (Spring 2021 & Fall 2021)

Econometrics I (Spring 2020 & Fall 2020)

- Planned and delivered course content for classes up to 60 students and around half of them were international students using a combination of lecture, group discussion, and programming labs
- Designed an application-oriented curriculum using interesting applications to motivate theories
- Employed the Socratic Questioning method to cultivate students' critical thinking
- Provided Stata and R labs to help students developing programming skills in economic analysis
- Facilitated online course and developed and managed the course site via Blackboard

Teaching Assistant, Sept. 2017 - Dec. 2019

Financial Econometrics (Fall 2019)

Econometrics I, Ph.D. level (Spring 2019)

Intermediate Microeconomics Theory (Fall 2017 & Spring 2018)

Principles of Macroeconomics (Fall 2018)

- Lead weekly discussion sessions to review and extend the course content with real-world examples
- Held office hours to meet with students to address issues and concerns
- Oversaw and provided mentoring to students who have troubles in class

Research Interests

- Econometrics, Financial Econometrics, Causal Inference, Machine Learning, Forecasting
- Concentration: Large panel models, Factor analysis in high-dimensional data

Working Papers

1. "Improved Inference for Interactive Fixed Effects Model with Cross-sectional Dependence," (**Job Market Paper**).
   - Proposed an improved inference procedure for the interactive fixed effects (IFE) model in the presence of cross-sectional dependence
   - Proved the validity of my approach in the asymptotic sense
   - Employed an data-driven distance measure and developed a bandwidth selection procedure for implementing my procedure
   - Wrote Matlab and R codes to study the performance of my procedure in finite samples
   - Illustrated the application of my procedure by studying the effects of divorce law reforms on U.S. divorce rates and the impacts of clean water and sewerage interventions on U.S.child mortality
2. "Non-robustness Issue for Estimating the Number of Factors in High Dimensional Data," (Manuscript).
   - Studied the existing methods for selecting the number of strong and weak factors in high-dimensional data
   - Wrote R codes for the existing methods to check their robustness in the presence of serial and cross-sectional correlations
   - Provided useful suggestions to the applied users for which method to use in dealing with different types of data sets
3. "Interactive Fixed-effects Dynamic Panel Models, A Spatial Analytical Approach," (Work in Progress).
   - Extended the inference procedure in my job market paper to the dynamic panel models

Research Experience

University of Connecticut, Storrs, CT

Research Assistant for Prof. Furtado (Summer 2018)

Research Title: Did OPT Policy Changes Help Steer and Retain Foreign Talent into STEM?

- Dealt with longitudinal data on the National Survey of College Graduates to explore the effectiveness of the 2008 OPT extension in attracting foreign-born students to study STEM fields in the United States
- Discussed with the Professor to decide (1) how to measure the share foreign born and (2) which functional form of instrumental variables to use
- Tried multiple sets of control variables at related literature reproducing more robust results

Honors and Awards

University of Connecticut, Storrs, CT

- *Eleanor Bloom Summer Fellowship* 2021, 2020, 2019 & 2018
- *Graduate School Pre-Doctoral Fellowship* 2019
- *Timothy A. and Beverly C. Holt Economics Fellowship* 2019

Seminars and Conferences

- Econometrics Seminars, University of Connecticut Each semester 2018 - Present
- New York Camp Econometrics April, 2019

Service

University of Connecticut, Storrs, CT

- *Senator*, The Graduate Student Senate 2019 - Present
- *President*, Association of Graduate Economics Students 2019 - 2020
- *Tutor and Mentor*, Student Athlete Success Program 2018 - 2019

Syracuse University, Syracuse, NY

- *Tutor*, Stevenson Center 2016 - 2017
- *Mentor*, The Center for International Services Summer 2016

Technical Skills

- **Programming Languages**: R, Python, LaTeX
- **Technical Softwares**: Matlab, Stata
- **Machine Learning methods:** LASSO, Ridge, PCA, Cross-sectional Validation, Classification, Model Selection, Step Functions
- **Statistical Techniques:** : Logistic Regression, Poisson Regression, Least Squared Regressions, LDA/QDA, General Linear Model, Non-parametric/Semi-parametric Regressions, Panel Data Model, Cross-Validation, Gradient Boosting Machine, Maximum Likelihood, GMM

Relevant Machine Learning Coursework

- ECON 5317 Machine Learning for Economists
  - Classification, Cross-sectional Validation, LASSO, Tree Based Methods
- ECON 5323 Convex Optimization with Python
  - Machine Learning, GBM, Gradient Descent
- ECON 5494 Open Source Programming with Python
  - Object-Oriented Programming
- ECON 5495 Programming and Computation with R
  - Principal Component Analysis

References

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