Jiaxi Li

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Education

The University of North Carolina at Chapel Hill   August 2021 - Present

Ph.D. in *Economics* (**GPA** 4.0, Good Standing; Field: *Financial Econometrics, Asset Pricing*)

Relevant Courses: Advanced Micro, Macro and Econometrics, Time Series, Micro Econometrics, International Monetary Economics, Asset Pricing Series (Consumption-based, Production-based, Theoretical, and Empirical), Advanced Empirical Finance

The University of Chicago   September 2018 – August 2019

Master of Arts in *Economics* (**GPA** 3.69) | **Honor**: MAPSS Scholarship

Relevant Courses: Theory of Financial Decisions, Advanced Econometrics (Machine Learning), Time Series Forecasting, Asset Pricing, Financial Statistics, Behavioral Finance, Data Analysis with R

The University of North Carolina at Chapel Hill   August 2014 - May 2018

Bachelor of Science in *Applied Mathematics* (**GPA**: 3.92) & *Economics* (**GPA**: 3.90), Minor in *Statistics and Analytics*, Credential in *Quantitative Financial Economics*

Honor: Graduate with Distinction, Dean's List, Economics Honor's Thesis, Herbert Brown Mayo Fund in Economics

The University of Tübingen (Germany Exchange)   March 2017 - July 2017

Major: *German Studies & Economics and Business Administration* (**German Grading System:** 1.2**)** | **Honor**: Baden-Württemberg Stipendium

Relevant Courses: China prior to the 19th Party Conference (in German), Advanced Labor Economics

Research Experience

Missing Financial Data: Filling the Tensor Blanks | R, Missing Data, Tensor PCA   April 2024 – Present

Advisors: Eric Ghysels, Andrii Babii

- Proposed a tensor structured model with a AR(1) process in time-dimension
- Developed a novel mean-projected Tensor PCA (TPCA) method, extending Babii et al. (2022) and showed that the new method generates a more accurate imputation for missing firm characteristics data
- Integrated the imputed dataset into neural network models to enhance return prediction accuracy

A Tensor PCA Analysis on Intraday Returns | R, Factor Model, Tensor PCA, Simulation

May 2023 – April 2024

Field Paper Requirement for Economics Ph.D., advisors: Eric Ghysels and Andrii Babii, additional committee member: Peter Hansen

- Utilized API and SQL commands in R to extract data from the CRSP, TAQ, and COMPUSTAT databases
- Estimated a low-rank factor model for intraday stock returns using the Tensor PCA developed by Babii et. al. (2022)
- Demonstrated through simulations that the combination of small sample sizes, severe intraday heteroskedasticity, and high noise levels can result in significant bias in the estimation
- Established that a weighted version of Tensor PCA can alleviate this issue in both simulations and real data analysis
- Proposed a sequential estimation method for Tensor PCA and demonstrated its improved explanatory power in both simulations and real data analysis
- Available at: https://jiaxili1995.github.io/

Improved Estimates of Industry Equity Capital Costs | R, Factor Model, Shiny App

December 2019 – July 2022

Coauthor with Mike Aguilar and Robert Connolly

- Showed that most of the uncertainty regarding ECC estimates comes from the factor risk premia, as opposed to factor exposures
- Integrated the STL filter with the Fama-French Factor Model to remove seasonal pattern and time-series noise resulting in reduced estimation noise in the estimated Industry Equity Capital Cost
- Created and deployed a Shiny app to automate the calculation of factor analysis (https://lijiaxi.shinyapps.io/REITs_app/)
- Available at: https://ssrn.com/abstract=3742221

Do ESG Shocks Affect Stock Prices? | MATLAB, Event Study   October 2018 – August 2019

Master's Thesis in Economics, advisor: Eugene Fama

- Matched CRSP and RepRisk into a joint Dataset, which contained daily information of 2048 US public listed firms from 2006 to 2018 with 13508 rate changing events
- Implemented Event Study technique with the Market Model to measure the Abnormal Return generated by ESG rate changes
- Developed an event-window methodology to address uncertainties associated with event dates
- Showed that on average an ESG upgrade would generate a 0.78% abnormal return during the event window, and a downgrade would generate a -0.67% abnormal return during the event window
- Demonstrated that RepRisk Rating delivers financially meaningful ESG information

The Timing of Marriage Matching | MATLAB, Simulation   September 2017 - May 2018

Bachelor Honor's Thesis in Economics, advisor: Stephen Lich-Tyler

- Developed the "Pizzazz" Marriage Matching Model and used Monte Carlo Simulation to estimate the optimal matching timing
- Demonstrated with a simplified example and verified through simulation that reducing penalties for delayed marriage and increasing the male-to-female ratio both contribute to longer marriage delays

Does Chinese Monetary Policy React to Her Stock Market? | MATLAB, Vector Autoregression
                                                                            May 2016 - August 2016

Summer Research for Herbert Brown Mayo Fund in Economics, advisor: Prof. Mike Aguilar

- Applied Vector Autoregression to address the simultaneous causality issue and assess the impact of Chinese stock market returns on China's monetary policy rate
- Estimated the effect of stock market returns on the policy rate controlling multiple macroeconomic variables, evaluating the relationship at daily, weekly, and monthly frequencies
- Found no statistically significant evidence indicating that the Chinese Monetary Authority adjusted its policy to influence the stock market

Conferences, Seminars and Workshops

2025 First Tiago Pires conference (discussant)

2025 Financial Machine Learning Summer School at Yale (Society of Financial Econometrics)

Working Experience

Market Observatory Project | R   December 2020 – June 2023

Co-founder of the Market Observatory Project with Prof. Mike Aguilar; Scientific Project Manager

- Assisted fellow Research Assistants with statistical concepts and R coding to create handbooks for current market status
- Standardized the data cleaning process using a pipeline and Beamer presentation output format in R
- Enhanced code efficiency through parallel processing, resulting in reduced code size and execution time

Quancheng Online Tutoring (formerly Easyke Online Tutoring)   September 2019 - Present

Tutor

- Tutored more than 2000 hours of advanced college-level Economics, Finance, and Mathematics courses with 9.99 satisfaction, including some master and PhD level economics courses
- Awarded "Tutor of the Month" more than five times, a testament to the outstanding teaching quality and high student satisfaction
- Motivated and guided students to apply theoretical models for analyzing current events, including the Trade War, fiscal and monetary policies, the Coronavirus pandemic, and fluctuations in financial markets
- Led students to gain a deep understanding of advanced concepts through inquiry-based and personalized

learning approaches

- Developed comprehensive lesson plans and post-lesson assessments for over 2,000 classes

Teaching Experience

- Teaching:
    - Econ 370: Economic Application of Data Science (Fall 2025)
- Undergraduate Learning Assistant:
    - Econ 420: Intermediate Macro Economics (Fall 2016, Fall 2017)
    - Math 232: Calculus II (Fall 2016)
- Teaching Assistant:
    - Econ 25000: Introduction to Finance (UChicago, Spring 2019)
    - Econ 701: Mathematical Economics (PhD-level, Fall 2022, Fall 2023)
    - Econ 400: Introduction to Econometrics (Spring 2023, Fall 2024)
    - Econ 101: Introduction to Economics (Spring 2024)
    - Econ 771: Advanced Econometrics (PhD-level, Spring 2025, upcoming Spring 2026)

Skills

- Certification: Achieved CFA Level I in December 2019
- Languages:
    - Proficient: Mandarin and English
    - Intermediate: German
- Programming Languages: R (primary), Python, MATLAB, Julia, SQL, GitHub, Mathematica, Latex (Overleaf), GitHub Stata, Microsoft Office
- Data Skills:
    - Statistical Analysis, Machine Learning, Tensor PCA, Time-series Modeling, Financial Data Analysis, Policy Analysis
    - Web Scraping and API (R), Macro Finance Modeling (MATLAB, DYNARE), Shiny App (R; sample: https://lijiaxi.shinyapps.io/trade_shiny/), Beamer Presentation (R)
- Others: Public Speaking, Critical Thinking, Problem Solving, Quick Learning, Teaching and Teamwork