

MENG TIAN (MAGGIE)

PERSONAL INFORMATION

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U.S. Permanent resident

CORE COMPETENCIES & TECHNICAL SKILLS

Programming	SQL, R, Python, SAS, Matlab, STATA and rich experience in data analysis, quantitative modeling and visualization tools.
Statistics Skills	Hypothesis Testing, Bayesian Inference, Model Selection, A/B Testing, Time Series Analysis, Survival Analysis, Causal Inference (Natural Experiments, Regression Discontinuity).
Machine Learning	Supervised Learning (Regressions, Regularizations, Linear Discriminant Analysis, Decision Tree, Random Forest, Boosting, SVM, KNN, GDA), Unsupervised Learning (Clustering, Factor Analysis, PCA), Neural Networks

EDUCATION

Ph.D. in Finance	2013 - 2021
- Baruch College, City University of New York (Academic advisor: Prof. Liuren Wu)	
- Visiting Student, Carnegie Mellon University, Course: Machine Learning, Data Mining	2018
- Visiting Student, New York University. Course: Financial Econometrics III	2015
B.A. in Economics and Finance	2008 - 2012
- Tsinghua University, China	

RESEARCH PROJECTS

Option Return Predictability via Machine Learning

- Globally search potential determinants of option returns by examining 104 features and using 1) lasso and ridge 3) clustering: PCR, PLS and 4) trees: boosting and random forests.
- Demonstrate large economic gains to investors, identify the best performing ML methods and trace their predictive gains to nonlinear interactions between features.

Constructing Fundamental Multi-Factor Models in the Option Market

- Perform risk factor analysis from a hedging perspective by option writers and construct 5 key risk indices.
- Use non-parametric regressions and weighted least squared regressions to visualize time-series factor returns.
- Build a capital asset pricing model of derivatives market with model estimation cross-sectionally & time series.

Characterization of Option-Implied Volatility Skew

- Derive direct linkages between 2 firm risk factors and cross-sectional variations of volatility skew: a systematic risk factor and a credit risk factor, theoretically and empirically.
- Analyze daily financial data (>50GB), and test hypotheses using regressions and portfolio formation analysis.
- Propose a trading strategy with superior stock return forecasting power and profitability compared to the state-of-art skew trading and validate the economic intuition via a wide range of collected data.

The Causal Effect of Stock Liquidity on the Managerial Incentives to Manipulate Earnings

- Use difference-in-difference approach and 2 quasi-natural experiments to examine this causal effect.
- Perform propensity score matching and diagnostic tests for firm classification and show that treated firms have different trade-offs in ways of earnings manipulations compared to control group.

- Design and implement regression-based tests to exploit the underlying mechanism and test robustness.

Longevity Risk Modeling and Derivatives Pricing, with Prof. Yinglu Deng

- Propose a novel stochastic model to characterize the underlying factors affecting longevity improvement.
- Extract the intrinsic features of mortality rates, e.g. asymmetric jumps, cohort effects in trends.
- Predict future mortality rates and estimate market price of a cutting-edge longevity security using MATLAB.

WORK EXPERIENCE

Risk Management Intern, Citi Bank

Summer 2012

- Evaluate loan risks, assist in internal credit rating and financial statement analysis.
- Complete auditing tasks and due diligence to investigate qualifications of client firms for financial products.
- Facilitate with database management and account transactions.

Research Intern, China Center for Financial Research

2012

- Scrutinize laws and industry reports and write drafts for the project of China Investment Encyclopedia.
- Analyze investor behaviors and arbitrage models of various types of funds.

PUBLICATIONS

Journal of Insurance Studies, Volume 15, Page 21-40, 2013

- **Meng Tian**, Yinglu Deng, Longevity Risk Modeling and Derivatives Pricing

TEACHING EXPERIENCE

Instructor	FIN 3000 Principles of Finance	Baruch College	2015 - 2017
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- Nominated Teaching Excellence Award in City University Of New York, Spring 2017

Teaching Assistant	ECON 1002 Macroeconomics	Baruch College	2013 - 2015
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HONORS & AWARDS

Doctoral Student Research Fellowship, Baruch College, City University of New York	2013 - 2018
Summer Research Fellowship, Baruch College, City University of New York	2013 - 2018
Graduate Center Doctoral Student Fellowship, City University of New York	2013 - 2017
China Construction Bank Scholarship, Tsinghua University	2008 - 2012
Gold Award, Undergraduate Students' Economic Research, Tsinghua University	2011
Outstanding Contributions Award, Shanghai World Exposition	2011
Rank 3/100,000 in National College Entrance Examination in Hainan Province, China	2008

REFERENCES

Liuren Wu (Chair)

Wollman Distinguished Professor of Finance
 Baruch College, City University Of New York
 E-mail: liuren.wu@baruch.cuny.edu
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