Mingjun Sun

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Education

Carnegie Mellon University, Tepper School of Business 2022–2027 (expected)
Ph.D. Candidate in Finance
Committee members: Burton Hollifield (Chair), Bryan Routledge, Patrick Blonien, Miguel Oliveira.

Carnegie Mellon University, School of Computer Science 2025–2026
M.S. in Machine Learning

Yale University 2019–2020
M.A. in Statistics

Tsinghua University 2015–2019
B.A. in Economics and Finance

Research Interests

Asset pricing; artificial intelligence and machine learning in finance.

Job Market Paper

What Do Public Firms Reveal About Firms Going Public?

Presentations: AFA 2027 Poster Session (scheduled), Carnegie Mellon University Finance Brownbag.

I study what economically similar public firms reveal about the pricing, financing, and risk of firms going public. Using pretrained language-model embeddings and disclosures available before pricing, I match issuers' business descriptions in S-1/F-1 filings to those in public firms' 10-Ks. Connected firms' returns during bookbuilding predict offer-price revisions and first-day IPO returns. The first-day relation persists after controlling for offer-price revisions, market and industry returns, and returns on conventional comparables, consistent with incomplete adjustment of offer prices to public information. Connected-firm leverage predicts issuer leverage one and two years after listing, conditional on initial leverage. For issuers initially above this benchmark, a larger leverage gap predicts greater debt reductions around the offering. After listing, issuer returns comove with connected returns beyond industry movements. Connected firms' pre-offer total and idiosyncratic volatility predict issuer total volatility throughout the first trading year.

Working Papers

High-Dimensional Factor Models with Cross-Sectional and Time-Series Predictors

Presentations: Future Alpha 2026, CMU-Pitt-Penn State Finance Conference 2024, Carnegie Mellon University Finance Brownbag.

Media: CMU News.

I study whether richer information about firms and macroeconomic conditions requires a more complex stochastic discount factor (SDF). Using instrumented principal components analysis (IPCA), I construct SDFs from firm characteristics, their interactions, random Fourier features, and factor-timing instruments. Nonlinear transformations of characteristics improve out-of-sample Sharpe ratios and reduce pricing errors, while gains from timing information vary across specifications. In several specifications, an SDF with fewer IPCA factors retains much of the full model's performance. These results distinguish the value of richer predictors from the number of factors needed to price returns. I provide an economic rationale: when common factors capture nondiversifiable risks, a restriction on near arbitrage limits the expected returns of portfolios whose remaining risks can be diversified away.

Dissecting Time-varying Anomalies

Award: Aydemir Family Prize in Memory of Rick Green.

I develop a time-varying LASSO to study changing relationships between firm characteristics and expected returns in a high-dimensional setting. Long estimation windows can obscure changes in predictive relationships, while short windows leave little information for estimating weak return signals. The method separately penalizes the L_1 norms of coefficients and their changes across estimation periods, controlling both predictor selection and the extent of time variation. In U.S. equities, it achieves higher out-of-sample R^2 and portfolio Sharpe ratios than Fama–MacBeth and conventional LASSO benchmarks.

Refereed Conference Publications

Uncertainty Quantification for Financial Foundation Models: A Survey

With Zijie Zhao and Shenbo Xu. Accepted, 7th ACM International Conference on AI in Finance (ICAIF), 2026.

We develop a framework that distinguishes six sources of uncertainty in financial foundation models, spanning evidence and context, model and inference, and outcome and action. We organize uncertainty-quantification methods by mechanism and financial application, identifying gaps in how evidence and reasoning reliability are connected to downstream predictions and decisions under costs and risk constraints.

Work in Progress

Demand-based Links and Predictable Returns

I propose a demand-based approach to identifying economically linked firms. Using portfolio holdings of actively managed U.S. equity mutual funds, I construct time-varying links between firms from cross-fund correlations in residualized active portfolio weight changes. Guided by a model in which firms have latent economic themes, I show that firms linked through mutual fund demand are more similar in fundamentals, that their returns comove more strongly, and that returns on demand-linked firms positively forecast focal-firm returns. I then use these spillovers to construct a demand-based cross-spillover momentum factor. The results suggest that institutional demand helps reveal latent firm links and information spillovers.

Teaching Experience

Carnegie Mellon University

Instructor, Finance (70-391), Undergraduate — Summer 2026

Median student evaluation: 5.0/5.0.

Teaching Assistant

Intermediate Deep Learning (Machine Learning Department); Finance (Undergraduate); MSCF Investments (MS in Computational Finance); Macroeconomics (Undergraduate); End-to-End Business Analytics (MBA); Business Value Through Integrative Analytics (Master's in Business Analytics); Operations Management (Undergraduate).

Honors and Fellowships

Aydemir Family Prize in Memory of Rick Green, CMU — 2024

William Larimer Mellon Fellowship, CMU — 2022

Work Experience

International Center for Finance, Yale School of Management — 2020–2022

Full-time Research Associate

Conducted research in financial economics with Professors William Goetzmann and Heather Tookes.

Academic Service

Admissions Committee, M.S. in Machine Learning, Carnegie Mellon University — 2025

Skills

Programming: Python (PyTorch, scikit-learn, NumPy, pandas), CUDA, C++, SQL.

Languages: Mandarin (native), English (fluent).

References

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