

# Markus Pelger

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<https://people.stanford.edu/mpelger/>

## **Employment:**

Stanford University, Department of Management Science and Engineering  
*Associate Professor with tenure* 2024 – present  
*Assistant Professor* 2015 – 2024

## *Affiliations:*

National Bureau of Economic Research (NBER), Research Associate in Asset Pricing  
Stanford Institute for Computational and Mathematical Engineering (ICME)  
Stanford Institute for Human-Centered Artificial Intelligence (HAI)  
Stanford Advanced Financial Technology Laboratory (AFTLab)  
Stanford Data Science (SDS)  
Stanford Woods Institute for the Environment

## **Education:**

*Ph.D. Economics*, 2015, University of California, Berkeley  
*Diplom Mathematics* (with distinction), 2012, University of Bonn, Germany  
*Diplom Economics* (with distinction), 2009, University of Bonn, Germany

## **Publications:**

1. Stripping the Discount Curve – a Robust Machine Learning Approach  
(with D. Filipovic and Y. Ye)  
*Management Science*, *accepted*  
*Best Paper at the 2022 Hong Kong Conference for Fintech, AI and Big Data in Business*
2. Deep Learning Statistical Arbitrage (with J. Guijarro-Ordóñez and G. Zanotti)  
*Management Science*, *accepted*  
*Crowell Memorial Second Prize 2022*
3. Change-Point Testing and Estimation for Risk Measures in Time Series (with L. Fan and P. Glynn)  
*Journal of Financial Econometrics*, *accepted*
4. Missing Financial Data (with S. Bryzgalova, S. Lerner and M. Lettau)  
*Review of Financial Studies*, 2025, 38(3), 803-882  
*Crowell Memorial First Prize 2022*  
*ICPM Research Award 2022*
5. Forest Through the Trees: Building Cross-Sections of Stock Returns  
(with S. Bryzgalova and J. Zhu)  
*Journal of Finance*, 2025, 80(5), 2447-2506  
*Best Paper in Asset Pricing Award at the SFS Cavalcade 2020*
6. Machine-Learning the Skill of Mutual Fund Managers (with R. Kaniel, Z. Lin and S. Van Nieuwerburgh)  
*Journal of Financial Economics*, 2023, 150(1), 94-138  
*Editor's Choice*
7. Target-PCA: Transfer Learning Large Dimensional Panel Data (with J. Duan and R. Xiong)

- Journal of Econometrics*, 2024, 244(2), 105521
8. Deep-Learning in Asset Pricing (with L. Chen and J. Zhu)  
*Management Science*, 2024, 70(2), 714-750  
*Best Paper Award at the Utah Winter Finance Conference 2020*  
*Best Paper Award at the Asia-Pacific Financial Markets Conference 2020*  
*CQA Academic Paper Competition, 2<sup>nd</sup> Prize, 2020*  
*AQR Capital Insight Award Finalist, 2021*  
*Best Paper IQAM Research Award 2022*
  9. A Simple Method for Predicting Covariance Matrices of Financial Returns (w. K. Johansson, M., G. Ogut, T. Schmelzer and S. Boyd)  
*Foundations and Trends in Econometrics*, 2023, 12(4), 324-407
  10. Large Dimensional Latent Factor Modeling with Missing Observations and Applications to Causal Inference (with R. Xiong)  
*Journal of Econometrics*, 2023, 233(1), 271-301  
*George Nicholson Best Student Paper Finalist at INFORMS 2019, Faculty Co-author*
  11. Interpretable Sparse Proximate Factors for Large Dimensions (with R. Xiong)  
*Journal of Business and Economic Statistics*, 2022, 40(4), 1642-1664
  12. State-Varying Factor Models of Large Dimensions (with R. Xiong)  
*Journal of Business and Economic Statistics*, 2022, 40(3), 1315-1333
  13. Factors that Fit the Time-Series and Cross-Section of Stock Returns (with M. Lettau)  
*Review of Financial Studies*, 2020, 33 (5), 2274-2325
  14. Estimating Latent Asset Pricing Factors (with M. Lettau)  
*Journal of Econometrics*, 2020, 218(1), 1-31  
*Dennis Aigner Award of the Journal of Econometrics, 2021*
  15. Understanding Systematic Risk: A High-Frequency Approach  
*Journal of Finance*, 2020, 75(4), 2179-2220
  16. On the Existence of Sure Profits via Flash Strategies (with C. Fontana, E. Platen)  
*Journal of Applied Probability*, 2019, 56(2), 384-397
  17. Large Dimensional Factor Modeling based on High-Frequency Observations  
*Journal of Econometrics*, 2019, 208 (1), 23-42
  18. Contingent Capital, Tail Risk and Debt-Induced Collapse (with N. Chen, P. Glasserman, B. Nouri)  
*Review of Financial Studies*, 2017, 30 (11), 3921-3969
  19. Optimal Stock Option Schemes for Managers (with A. Chen)  
*Review of Managerial Science*, 2014, 8(4), 437-464
  20. New Performance-Vested Stock Option Schemes (with A. Chen, K. Sandmann)  
*Applied Financial Economics*, 2013, 23(8), 709-727

### **Conference Publications:**

1. Attention Factors for Statistical Arbitrage (with E. Epstein, R. Wang and J. Choi)  
*ICAIF 25: Proceedings of the 6<sup>th</sup> ACM International Conference on AI in Finance*
2. Automatic Outlier Rectification via Optimal Transport (with J. Blanchet., J. Li and G. Zanotti)  
*NeurIPS 24: Proceedings of the 38<sup>th</sup> International Conference of Neural Information Processing Systems*
3. TextGNN: Improving Text Encoder via Graph Neural Network in Sponsored Search (with J. Zhu, Y. Cui, Y. Liu, H. Sun, X. Li, L. Zhang, T. Yan, R. Zhang and H. Zhao)  
*The Web Conference 2021*

### **Handbook Chapters:**

1. Asset Pricing and Investment with Big Data  
*In: Machine Learning in Financial Markets: A Guide to Contemporary Practice, Cambridge University Press, 2023, 293-316*

### **Working Papers:**

1. Shrinking the Term Structure (with D. Filipovic and Y. Ye)  
*Review of Finance, revise & resubmit*
2. Asset Pricing Factors with Economic Targets (w. S. Bryzgalova, V. DeMiguel and S.A. Li)  
*Bates-White Prize for Best Paper at the 2023 SoFiE Conference*  
*INFORMS Finance Student Best Paper Award 2023, Faculty Co-author*
3. Factor Analysis for Large Non-Stationary Panels with Endogenous Missingness and Applications to Causal Inference (with J. Duan and R. Xiong)  
*Management Science, revise & resubmit*
4. Selective Multiple Testing: Inference for Large Panels with Many Covariates (with J. Zou)  
*Management Science, revise & resubmit*
5. Imputation Powered Inference for Missing Covariates (with J. Duan)
6. Bayesian Imputation of Missing Data with Optimal Look-Ahead-Bias and Variance Tradeoff (with J. Blanchet, F. Hernandez, V. A. Nguyen and X. Zhang)  
*Management Science, reject & resubmit*

### **Work in Progress:**

1. Term Structure of Characteristic-Sorted Portfolios and Multi-Horizon Investment (with S. Bryzgalova and S. Kozak)
2. Bridging the Yield Gap (with D. Filipovic and R. Wang)
3. International Yield Curves (with N. Camenzind, D. Filipovic and R. Wang)
4. Spanning the Option Price Surface (with D. Filipovic, S. Lerner and X. Ping)
5. A Universal Factor Model for Equities and Derivatives (with D. Filipovic, S. Lerner and X. Ping)
6. Do Algorithmic Traders Lead to Market Instability? A Multi-Agent Reinforcement Learning Approach (with Y. Fan and X. Yu)
7. Machine-learning the Skill of Bond Fund Managers (with R. Kaniel, S. Van Nieuwerburgh and L. Zhou)
8. How Much Sustainability is Really in Stock Prices? (with E. Archetti, E. Lütkebohmert-Holz and M. Rockel)
9. The Microstructure of Cryptocurrency Markets: Men vs. Machine (with A. Caosun and G. Zanotti)

### **Selected Fellowships and Awards:**

Chambers Faculty Scholar in the School of Engineering, Stanford, 2024  
Bates-White Prize for the Best Paper at the Society for Financial Econometrics (SoFiE) Conference, 2023  
Editor's Choice at the Journal of Financial Economics, 2023  
INFORMS Finance Student Best Paper Award, Faculty Co-author, 2023  
Crowell Memorial First and Second Prizes, 2022  
Best Paper IQAM Research Award, 2022  
International Center for Pension Management (ICPM) Research Award, 2022  
Best Paper at the 2022 Hong Kong Conference for Fintech, AI and Big Data in Business  
Dennis Aigner Award of the Journal of Econometrics, 2021  
AQR Capital Insight Award Finalist, 2021  
Best Paper in Asset Pricing Award at the SFS Cavalcade, 2020  
Best Paper Award at the Utah Winter Finance Conference, 2020  
Best Paper Award at the Asia-Pacific Financial Markets Conference 2020  
CQA Academic Paper Competition, 2<sup>nd</sup> Prize, 2020  
George Nicholson Best Student Paper Finalist at INFORMS, Faculty Co-author, 2019  
Graduate Teaching Award at Stanford University, 2019  
Reid and Polly Anderson Faculty Fellow at Stanford University, 2016  
Eliot J. Swan Prize for best Ph.D. student, Department of Economics, UC Berkeley, 2012

UC Berkeley Outstanding Graduate Student Instructor Award, 2011  
Institute for New Economic Thinking (INET) Prize, UC Berkeley, 2011  
German Academic Exchange Service (DAAD) Fellowship, 2009-2010  
Fulbright Scholarship, 2007-2008  
Scholarship of the German National Academic Foundation (Studienstiftung), 2004-2009

**Professional Service:**

Associate Editor:

- Management Science (Finance Department)
- Operations Research (Financial Engineering)
- Journal of Econometrics
- Journal of Financial Econometrics
- Digital Finance
- Data Science in Science

Guest Editor:

- Review of Asset Pricing Studies (RAPS): Special Issue on AI/ML in Asset Pricing
- Journal of Financial Stability: Special Issue on the Opportunities and Risk of AI Technologies in Finance and Banking

Referee:

Journal of Finance, Review of Financial Studies, Journal of Financial Economics, Management Science, Econometrica, Journal of Econometrics, Mathematical Finance, JASA, Annals of Statistics, Journal of Financial Econometrics, Journal of Political Economy, Journal of Business and Economic Statistics, Journal of Quantitative Economics, Journal of Banking and Finance, National Science Foundation, Israel Science Foundation, Research Council of Canada, Financial Analysts Journal, Journal of Financial Services Research, Review of Economic Studies, Mathematics and Financial Economics, European Research Council

Organizer:

AI & Big Data in Finance Research Forum (ABFR), Advanced Financial Technology Laboratory (AFTLab) at Stanford: AFTLab Seminars and Doctoral Seminars

Conference, Program or Session Committee:

AFA 2021, 2024, SFS Cavalcade 2022, 2024, 2025, SoFiE 2022, 2023, 2024, 2025, Hong Kong Conference for Fintech, AI and Big Data in Business 2022, 2023, 2025, INFORMS 2018, 2019, 2023, 2024, MFA 2020, 2021, GSU-RFS 2023, 2025

**Consulting:**

International Monetary Fund  
Federal Reserve Banks of Dallas and San Francisco  
AllianceBernstein  
Migdal

**Teaching:**

Instructor, Stanford University, Department of Management Science & Engineering:

- Investment Science (MS&E 245A), Autumn 2015, Autumn 2016, Autumn 2017, Autumn 2018, Winter 2020, Fall 2020, Fall 2021, Fall 2022, Fall 2023, Fall 2024, Fall 2025
- Financial Statistics (MS&E 349), Spring 2017, Spring 2018, Spring 2019, Winter 2021, Winter 2023, Winter 2024, Spring 2025

- Senior Project Course (MS&E 108), Winter 2017, Winter 2018, Winter 2019, Winter 2020, Winter 2021, Winter 2022, Winter 2023, Winter 2024, Winter 2025
  - Introductory Financial Analysis (MS&E 145), Autumn 2015
  - Blockchain Technologies & Entrepreneurship (MS&E 447), Spring 2023, Winter 2024
- Teaching Assistant, UC Berkeley, Haas School of Business, Master of Financial Engineering
- Empirical Methods in Finance (MFE 230E), Spring 2015
- Teaching Assistant, UC Berkeley, Department of Economics
- Graduate Econometrics (ECON 240A, ECON 240B), Spring 2013, Spring 2012, Fall 2011
  - Undergraduate Econometrics (ECON 141A), Fall 2010

## **Doctoral Students:**

### **Current Doctoral Students:**

1. Junting Duan, Management Science and Engineering  
Joint work: Target-PCA: Transfer Learning Large Dimensional Panel Data, Factor Analysis for Causal Inference on Large Non-Stationary Panels with Endogenous Treatment, Imputation-Powered Inference for Missing Covariates
2. Greg Zanotti, Management Science and Engineering  
Joint work: Deep-Learning Statistical Arbitrage, The Microstructure of Cryptocurrency Markets: Men vs. Machine
3. Enrica Archetti, Management Science and Engineering  
Joint work: How Much Sustainability is Really in Stock Prices?
4. Xueye Ping, Management Science and Engineering  
Joint work: Spanning the Option Price Surface, A Universal Factor Model for Equities and Derivatives
5. Aldis Elfarsdottir, Management Science and Engineering  
Joint work: Strategic Environmental Reporting
6. Rose Wang, Management Science and Engineering  
Joint work: Bridging the Yield Gap, International Yield Curves
7. Alex Yang, Computational and Mathematical Engineering
8. Adam Rebei, (co-advised with Kay Giesecke), Computational and Mathematical Engineering
9. Jason Pan (co-advised with Kay Giesecke), Management Science and Engineering
10. David Dai, Management Science and Engineering

### **Former Doctoral Students:**

11. Luyang Chen, Ph.D. 2019, Computational and Mathematical Engineering  
(co-advised with George Papanicolaou)  
Thesis: Studies in Stochastic Optimization and Applications  
Joint work: Deep-Learning in Asset Pricing, Asset Pricing Tests for a Large Number of Assets  
First position: Quantitative Analyst, Two Sigma, New York
12. Ruoxuan Xiong, Ph.D. 2020, Management Science and Engineering  
Thesis: Essays on High Dimensional Statistics  
Joint work: State-Varying Factor Models of Large Dimensions, Interpretable Sparse Proximate Factors for Large Dimensions, Large Dimensional Latent Factor Modeling with Missing Observations and Applications to Causal Inference  
First position: Assistant Professor, Emory University
13. Xiaocheng Li, Ph.D. 2020, Management Science and Engineering  
(co-advised with Kay Giesecke)  
Thesis: Machine Learning for Operations Research  
Joint work: Machine Learning Estimators for Corporate Default Probabilities  
First position: Assistant Professor, Imperial College London
14. Jason Zhu, Ph.D. 2021, Management Science and Engineering  
Thesis: Essays in Asset Pricing and Machine Learning

- Joint work: Deep-Learning in Asset Pricing, Forest Through the Trees: Building Cross-Sections of Stock Returns, TextGNN: Improving Text Encoder via Graph Neural Network in Sponsored Search  
 First position: Data Scientist at Microsoft, Seattle
15. Jorge Guijarro-Ordonez, Ph.D. 2021, Mathematics  
 (co-advised with George Papanicolaou)  
 Joint work: Deep-Learning Statistical Arbitrage  
 First position: Quantitative Researcher at BlackRock, New York
16. Ye Ye, Ph.D. 2022, Management Science and Engineering  
 Thesis: Essays in Machine Learning in Finance  
 Joint work: Stripping the Discount Curve – A Robust Machine Learning Approach, Shrinking the Term Structure  
 First position: Research Software Engineer at Uber, San Francisco
17. Zihan Lin, Ph.D. 2022, Computational and Mathematical Engineering  
 Thesis: Essays on Machine Learning and Price Impact in Institutional Finance  
 Joint work: Machine-Learning the Skill of Mutual Fund Managers  
 First position: Quantitative Researcher at Hudson River Trading, New York
18. Sven Lerner, Ph.D. 2023, Computational and Mathematical Engineering  
 Thesis: Estimating Latent Structure in Financial Data  
 Joint work: Missing Financial Data, Spanning the Option Price Surface  
 First position: Quantitative Analyst at Citadel, Greenwich
19. Florian Fiaux, Ph.D. 2024, Economics  
 (co-advised with Monika Piazzesi)  
 Thesis: Essays in Empirical Finance  
 Joint work: Investment Styles and Stock Return Prediction  
 First position: Quantitative Researcher at TerraCotta
20. Jiacheng Zou, Ph.D. 2024, Management Science and Engineering  
 Thesis: Inference for Large Panel Data with Machine Learning  
 Joint work: Selective Multiple Testing: Inference for Large Panels with Many Covariates, Large Dimensional Change Point Detection  
 First position: Postdoctoral researcher, IEOR Columbia University
21. Yang Fan, Ph.D. 2025, Computational and Mathematical Engineering  
 Thesis: Machine Learning and Statistical Perspectives on Financial Market Behavior  
 Joint work: Do Algorithmic Traders Lead to Market Instability? A Multi-Agent Reinforcement Learning Approach, Large Dimensional Change Point Detection  
 First position: Quantitative Researcher at Cubist Systematic Strategies

Ph.D. Committee:

- Moojoong Ra, Management Science and Engineering
- Yexiang Wei, Management Science and Engineering
- Joongyeub Yeo, Computational and Mathematical Engineering
- Carl-Fredrik Arndt, Computational and Mathematical Engineering
- Simon Hilpert, Economics
- Jessie Li, Economics
- Yu An, GSB Finance
- Michael Ohlrogge, Management Science and Engineering
- Kyu Koh Yoo, Energy Resources Engineering
- Wonjin Yun, Energy Resources Engineering
- Markus Zechner, Energy Resources Engineering
- Enguerrand Horel, Computational and Mathematical Engineering

- Amy Wang, GSB Finance
- Nadia Kotova, GSB Finance
- Ziyi Yang, Mechanical Engineering
- Bernardo Ramos, Management Science and Engineering
- Xu Lu, GSB Finance
- Hao Ma, Swiss Finance Institute
- Guanting Chen, Computational and Mathematical Engineering
- Tizian Otto, Finance, University of Hamburg
- Xuhui Zhang, Management Science and Engineering
- Geoff Ramseyer, Computer Science
- Lin Fan, Management Science and Engineering
- Kasper Johansson, Electrical Engineering
- Jason Liang, Computational and Mathematical Engineering

### **Selected Presentations:**

- 2025 **Seminars:** University of Vienna, (Finance, scheduled), Princeton (Finance), ESSEC (Finance), Aarhus (Economics), University of Illinois Chicago (Finance), Indiana University (Finance), University of Luxembourg (Finance), City University of Hong Kong (Finance), Federal Reserve Board Washington, CIBC Finance Innovations & AI Seminar
- Conferences:** Journal of Investment Management Conference, Stevanovich Center for Financial Mathematics: Market Microstructure, Quantitative Trading, High Frequency and Large Data, Western Finance Association Meeting (WFA), European Financial Management Association (EFMA, scheduled), SIAM Conference on Financial Mathematics and Engineering, World Congress in Econometrics, International Conference on Econometrics and Statistics
- 2024 **Seminars:** Northwestern University (Finance), John Hopkins University (Finance), Iowa State University (Finance), UC Berkeley (Risk Seminar), Korean Advanced Institute of Science & Technology (Finance), University of Cincinnati (Finance), Copenhagen Business School (Finance), University of Texas, Austin (Operations Research), Balyasny Asset Management, Bloomberg, Qube Research & Technologies
- Conferences:** Annual Meeting of the American Finance Association, Annual Meeting of the American Economic Association, SFS Cavalcade, INFORMS, Conference on Computational and Financial Econometrics, Australian Finance and Banking Conference
- 2023 **Seminars:** Shanghai Advanced Institute of Finance (Finance), European Investment Bank, Houston (Finance), Federal Reserve Bank Dallas, Yale (Econometrics), Columbia University (Statistics), NYU Stern (Statistics), Technical University of Munich (Finance), Stony Brook (Mathematical Finance), NVIDIA, Balyasny Asset Management, Bank of America
- Conferences:** Conference on Computational and Financial Econometrics, Machine Learning and Finance at Oxford-Man Institute, NBER Asset Pricing Meeting, RFS-NBER Big Data Conference, Annual Meeting of the American Finance Association, Western Conference on Mathematical Finance
- 2022 **Seminars:** University of Maryland (Finance), UC San Diego (Finance), Swiss Federal Institute of Technology Lausanne (Finance), University of Southampton (Econometrics), City University of Hong Kong (Finance), Peking University (Mathematical Finance), AI & Big Data in Finance Research Forum, NVIDIA, PanAgora Asset Management, DekaBank

- Conferences: NBER-NSF Time-Series Conference, Annual Columbia-Bloomberg Machine Learning in Finance Conference, NBER-NSF SBIES Conference, NBER Forecasting and Empirical Methods, NBER Big Data and High-Performance Computing for Financial Economics, Oxford-Man Institute of Quantitative Finance, Stockholm School of Economics and BI Norwegian Business School Conference, GSU CEAR-Finance Conference, Annual Meeting of the American Economic Association, Rochester Econometrics Conference, California Econometrics Conference, RCEA Big Data and Machine Learning Conference, Society for Financial Econometrics Annual Conference in Cambridge, Hong Kong Conference for Fintech, AI and Big Data in Business, International Conference on Computational and Financial Econometrics, German Economists Abroad Annual Meeting, AI in Fintech Forum
- 2021 Seminars: Geneva Finance Research Institute (Finance), Rutgers University (Finance), UC Berkeley (Finance), UC Berkeley (Risk Management), Vanguard, Queen Mary College London (Finance), NVIDIA, King's College London (Finance), University of Edinburgh (Management), Santa Clara University (Finance), UCLA (Mathematical Finance), Bremen University (Diginomics), World Online Seminars on Machine Learning in Finance
- Conferences: NBER-NSF Time-Series Conference, Annual Meeting of the American Finance Association, Global AI Finance Research Conference, Global AI Finance Research Conference, European Finance Association Annual Meeting, North American Summer Meeting of the Econometric Society, INFORMS Annual Meeting, China Meeting of the Econometric Society, Society for Financial Econometrics Annual Conference in San Diego, Swiss Society of Economics and Statistics Annual Congress, AQR Capital Insight Award Finalist Presentation, Annual Meeting of the Swiss Society for Financial Market Research, Midwest Finance Association Annual Meeting, French Association of Asset and Liability Manager, AI in Asset Management Day at Georgetown University, CMStatistics
- 2020 Seminars: MIT (Data Science), University of Zurich (Finance), Imperial College London (Finance), Chinese University of Hong Kong (Econometrics), Singapore Management University (Econometrics), BlackRock, Washington University in St. Louis (Finance), CQA, NVIDIA, Temple University (Finance), CMF, Two Sigma
- Conferences: Utah Winter Finance Conference, SFS Cavalcade North America, GSU-RFS FinTech Conference, European Winter Meeting of Econometric Society, Annual Conference on Asia-Pacific Financial Markets, Global Quantitative Conference, Shanghai Edinburgh Fintech Conference, Triangle Macro-Finance Workshop, Annual NLP and Machine Learning in Investment Management Conference
- 2019 Seminars: Harvard/MIT (Econometrics), Duke (Econometrics), PUC Rio (Econometrics), Yale (Finance), UC Berkeley (IEOR), University of Heidelberg (Economics)
- Conferences: Chicago Asset Pricing Conference, SFS Cavalcade North America, GEA, CMStatistics, New Technologies in Finance Conference at Columbia University, Informs Annual Meeting, Fourth International Workshop in Financial Econometrics, Sao Paulo: Itau Machine Learning and Financial Econometrics Conference, LBS Summer Finance Symposium, SIAM Conference on Financial Mathematic & Engineering, Annual Meeting of the American Finance Association
- 2018 Seminars: Columbia University (Econometrics), Columbia University (IEOR-DRO), University of Chicago (Mathematical Finance), University of Cologne (Econometrics), University of Zurich (Computational Financial Economics), UC Santa Barbara (Statistics), BlackRock, UC Berkeley (Risk Management)
- Conferences: NBER Asset Pricing Meeting, NBER-NSF Time-Series Conference, NBER-NSF SBIES Conference, GEA, Western Mathematical Finance Conference, Informs

- Annual Meeting, Morgan Stanley's Quantitative Equity Research Conference, California Econometrics Conference, European Meeting of the Econometric Society, North American Summer Meeting of the Econometric Society, Society for Financial Econometrics Annual Conference, AI in FinTech Forum
- 2017 Seminars: University of Toronto (Quantitative Finance), Boston University (Financial Mathematics), UC Berkeley (Risk Management), Humboldt University (Mathematical Statistics), University of Ulm (Finance and Insurance)
- Conferences: NBER-NSF Time-Series, Berkeley-Stanford Econometrics Conference, Informs Annual Meeting, Society for Financial Econometrics Annual Conference, University of Chicago: Stevanovich Center Conference on High-Frequency Data, Columbia University: Machine Learning in Finance Workshop, Western Mathematical Finance Conference
- 2016 Seminars: University of Pennsylvania (Econometrics), University of Bonn (Finance), Chinese University of Hong Kong (Operations Research), Rutgers University (Applied Mathematics), UC Santa Cruz (Applied Mathematics)
- Conferences: NBER-NSF Time-Series, Bachelier Finance Society World Congress, SIAM Conference on Financial Mathematics, Society for Financial Econometrics Annual Conference, Financial Engineering and Risk Management Symposium, Annual Meeting of the American Economic Association
- 2015 Seminars: Stanford (Financial and Risk Analytics), UC Berkeley (Statistics)
- Conferences: European Winter Meeting of the Econometric Society, International Conference on Computational and Financial Econometrics, Western Mathematical Finance Conference, Informs Annual Meeting
- 2014 Seminars: UC Berkeley (Econometrics), UC Berkeley (Risk Management)
- Conferences: Western Finance Association Conference, Informs Annual Meeting, North America Meeting of the German National Academic Foundation
- 2013 Seminars: University of Freiburg (Finance)
- 2012 Seminars: University of Bonn (Finance and Insurance)

### **Selected Discussions:**

- "Asset Embeddings", (X. Gabaix, R. Koijen, R. Richmond and M. Yogo), AFA 2025
- "Virtue of Complexity", (B. Kelly), Ken Singleton Celebration Conference, 2023
- "Missing Data in Asset Pricing Panels", (J. Freyberger, H. Hoepfner, A. Neuhierl, M. Weber), AFA 2023
- "The Statistical Limit of Arbitrage", (R. Da, S. Nagel and D. Xiu), AFA 2023
- "Eigenvalue Test for the Number of Latent Factors in Short Panels" (A.P. Fortin, P. Gagliardini and O. Scaillet), Halbert White Jr. Memoria JFED Lecture at SoFiE 2022
- "Uniform Asymptotics for Weak and Strong Factors" (A. Onatski), Chamberlain Seminar 2022
- "Test Assets and Weak Factors" (S. Giglio, D. Xiu and D. Zhang), AFA 2022
- "Factor-Based Imputation of Missing Values and Covariances in Panel Data of Large Dimensions" (E. Cahan, J. Bai and S. Ng), SoFiE Seminar 2021
- "High-Dimensional Granger Causality Tests with an Application to VIX and News" (A. Babii, E. Ghysels and J. Striaukas), SoFiE Machine Learning Virtual Conference 2021
- "Text Selection" (B. Kelly, A. Manela and A. Moreira), AEA 2021
- "Risk Price Variation: The missing Half of Empirical Asset Pricing" (A. J. Patton and B. M. Weller), EFA 2020
- "Frequency Dependent Risk" (A. Neuhierl and R. T. Varneskov), AFA 2020
- "Rank Tests at Jump Events" (J. Li, V. Todorov, G. Tauchen and H. Lin), MFA 2017

**Funding:**

SCBx  
Hanwha Life  
Qube Research & Technologies  
Balyasny Asset Management  
China Merchants Bank  
MSCI  
Swiss Re

**Affiliations:**

American Finance Association, American Economic Association, Society for Financial Econometrics, Econometric Society, Society for Industrial and Applied Mathematics, INFORMS, European Economic Association, European Finance Association

**Personal Information:**

Languages: German (native), English (fluent), French (good)  
Citizenship: German, Permanent Resident of United States