# Markus Pelger

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**Employment:**

*Assistant Professor*, 2015-present
Department of Management Science and Engineering, Stanford University

**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. Factors that Fit the Time-Series and Cross-Section of Stock Returns (with M. Lettau)
 *Review of Financial Studies, 2020, 33 (5), 2274-2325*
1. Estimating Latent Asset Pricing Factors (with M. Lettau)
 *Journal of Econometrics, 2020, 218(1), 1-31*
2. Understanding Systematic Risk: A High-Frequency Approach
 *Journal of Finance, 2020, 2020, 75(4), 2179-2220*
3. Interpretable Sparse Proximate Factors for Large Dimensions (with R. Xiong)
 *Journal of Business and Economic Statistics, 2020, conditionally accepted*
4. On the Existence of Sure Profits via Flash Strategies (with C. Fontana, E. Platen)
 *Journal of Applied Probability, 2019, 56(2), 384-397*
5. Large Dimensional Factor Modeling based on High-Frequency Observations
 *Journal of Econometrics, 2019, 208 (1), 23-42*
6. Contingent Capital, Tail Risk and Debt-Induced Collapse (with N. Chen, P. Glasserman, B. Nouri)
 *Review of Financial Studies*, 2017, 30 (11), 3921-3969
7. Optimal Stock Option Schemes for Managers (with A. Chen)
 *Review of Managerial Science*, 2014, 8(4), 437-464
8. New Performance-Vested Stock Option Schemes (with A. Chen, K. Sandmann)
 *Applied Financial Economics*, 2013, 23(8), 709-727

**Working Papers:**

1. Deep-Learning in Asset Pricing (with L. Chen and J. Zhu)
 *Best Paper Award at the Utah Winter Finance Conference 2020*
 *CQA Academic Paper Competition, 2nd Prize, 2020*
2. Forest Through the Trees: Building Cross-Sections of Stock Returns
 (with S. Bryzgalova and J. Zhu)
 *Best Paper in Asset Pricing Award at the SFS Cavalcade 2020*
3. Large Dimensional Latent Factor Modeling with Missing Observations and Applications to Causal Inference (with R. Xiong)
 *George Nicholson Best Student Paper Finalist at INFORMS 2019, Faculty Co-author*

4. State-Varying Factor Models of Large Dimensions (with R. Xiong)
   *Journal of Business and Economic Statistics, R&R*
5. Change-Point Testing and Estimation for Risk Measures in Time Series (with L. Fan and P. Glynn)

**Work in Progress:**

1. Stripping the Discount Curve (with D. Filipovic, K. Giesecke and Y. Ye)
2. Time-Varying Asset Pricing Factors for Stock Returns (with Z. Lin)
3. Term Structure of Bonds: Level, Slope and Curvature are Artefacts (with Y. Ye)
4. Machine Learning Estimators for Corporate Default Probabilities (with K. Giesecke and X. Li)
5. Asset Pricing Tests for a Large Number of Assets (with L. Chen)
6. Deep Learning Statistical Arbitrage (with J. Oronez and G. Zanotti)

**Selected Fellowships and Awards:**

Best Paper in Asset Pricing Award at the SFS Cavalcade, 2020
Best Paper Award at the Utah Winter Finance Conference, 2020
CQA Academic Paper Competition, 2$^{nd}$ 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
Summer Research Award, Hausdorff Center of Mathematics, University of Bonn, 2012
UC Berkeley Outstanding Graduate Student Instructor Award, 2011
Institute for New Economic Thinking (INET) Prize, UC Berkeley, 2011
Fulbright Scholarship, 2007-2008
Scholarship of the German National Academic Foundation (Studienstiftung), 2004-2009

**Professional Service:**

Associate Editor:
Management Science (Finance Department)

Referee:
Journal of Finance, Review of Financial Studies, Management Science, 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

**Teaching:**

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

- Investment Science (MS&E 245A), Autumn 2015, Autumn 2016, Autumn 2017, Autumn 2018, Winter 2020
- Financial Statistics (MS&E 349), Spring 2017, Spring 2018, Spring 2019
- Senior Project Course (MS&E 108), Winter 2017, Winter 2018, Winter 2019, Winter 2020
- Introductory Financial Analysis (MS&E 145), Autumn 2015

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. Ruoxuan Xiong, 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, Inferential Theory for Partially Observed Factor Models of Large Dimensions
   First position: Assistant Professor, Emory University
2. Xiaocheng Li, 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
3. Jason Zhu, Management Science and Engineering
   Thesis: Machine Learning in Finance
   Joint work: Deep-Learning in Asset Pricing, Forest Through the Trees: Building Cross-Sections of Stock Returns
4. Zihan Lin, Computational and Mathematical Engineering
   Thesis: Essays on Financial Econometrics
   Joint work: Time-Varying Asset Pricing Factors for Stock Returns
5. Ye Ye, Management Science and Engineering
   Joint work: Stripping the Discount Curve, Estimating Treasury Dynamics using Deep-Learning, Term Structure of Bonds: Level, Slope and Curvature are Artefacts
6. Jiacheng Zou, Management Science and Engineering
   Joint work: A Machine-Learning Solution to Multiple-Testing in Finance
7. Greg Zanotti, Management Science and Engineering
   Joint work: Deep-Learning Statistical Arbitrage, Cryptocurrency Arbitrage

Former Doctoral Students:

8. 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

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

**Selected Presentations:**

2020 University of Zurich: Finance Seminar (scheduled)
University of Vienna: Departmental Seminar (scheduled)
Bremen University: Diginomics Seminar (scheduled)
Imperial College London: Finance Seminar (scheduled)
Chinese University of Hong Kong: Econometrics Seminar (scheduled)
Singapore Management University: Econometrics Seminar (scheduled)
Fordham University: Finance Seminar (scheduled)
Global Quantitative Conference
Shanghai Edinburgh Fintech Conference
BlackRock Academic Seminar
Washington University in St. Louis: Finance Seminar
Singapore Management University: Finance Seminar
MIT: Data Science Seminar
CQA Academic Seminar
NVIDIA Academic Seminar
Temple University: Finance Seminar
Triangle Macro-Finance Workshop
SFS Cavalcade North America
Annual NLP and Machine Learning in Investment Management Conference
CMF Academic Seminar Series
Two Sigma Academic Seminar Series
GSU FinTech Conference
Utah Winter Finance Conference

2019 GEA Conference in Frankfurt
CMStatistics in London
New Technologies in Finance Conference at Columbia University
Chicago Asset Pricing Conference
Duke: Econometrics Seminar
Informs Annual Meeting in Seattle
Fourth International Workshop in Financial Econometrics
Sao Paulo: Itau Machine Learning and Financial Econometrics Conference
PUC Rio: Econometrics Seminar
Yale SOM: Finance Seminar
UC Berkeley: IEOR Seminar
University of Heidelberg: Departmental Seminar
LBS Summer Finance Symposium
SIAM Conference on Financial Mathematic & Engineering
SFS Cavalcade North America
Harvard/MIT Econometrics Seminar
Annual Meeting of the American Finance Association in Atlanta

2018 GEA Conference in Bonn
University of Cologne: Econometrics Seminar
Western Mathematical Finance Conference in Los Angeles
NBER Asset Pricing Meeting in Stanford
Informs Annual Meeting in Phoenix

Morgan Stanley's Quantitative Equity Research Conference
California Econometrics Conference in Irvine
Columbia University: IEOR-DRO Seminar
NBER-NSF Time-Series Conference in San Diego
European Meeting of the Econometric Society
North American Summer Meeting of the Econometric Society in Davis
University of Zurich: Seminar for Computational Financial Economics
Society for Financial Econometrics Annual Conference in Lugano
NBER-NSF SBIES Conference
UC Santa Barbara: Statistics Seminar
Columbia University: Econometrics Seminar
University of Chicago: Mathematical Finance Seminar
BlackRock Research Seminar
AI in FinTech Forum
UC Berkeley: Risk Management Seminar

2017 Berkeley-Stanford Econometrics Conference
Informs Annual Meeting in Houston
NBER-NSF Time-Series Conference in Chicago
Society for Financial Econometrics Annual Conference in New York
University of Chicago: Stevanovich Center Conference on High-Frequency Data
Columbia University: Machine Learning in Finance Workshop
University of Toronto: Quantitative Finance Seminar
Western Mathematical Finance Conference in Seattle
Boston University: Financial Mathematics Seminar
UC Berkeley: Risk Management Seminar
Humboldt University in Berlin: Mathematical Statistics Seminar
University of Ulm: Finance and Insurance Seminar

2016 University of Bonn: Finance Seminar
Chinese University of Hong Kong: Department Seminar
Rutgers University: Applied Mathematics Seminar
NBER-NSF Time-Series Conference in New York
Bachelier Finance Society World Congress in New York
SIAM Conference on Financial Mathematics in Austin
Society for Financial Econometrics Annual Conference in Hong Kong
Financial Engineering and Risk Management Symposium in Guangzhou
University of Pennsylvania: Econometrics Seminar
UC Santa Cruz: Applied Mathematics and Statistics Seminar
Stanford University: ISL Colloquium
Annual Meeting of the American Economic Association in San Francisco

2015 Stanford University: Seminar at the Center for Financial and Risk Analytics
UC Berkeley: Neyman Seminar at the Department of Statistics
European Winter Meeting of the Econometric Society in Milan
International Conference on Computational and Financial Econometrics in London
Western Mathematical Finance Conference in Austin
Informs Annual Meeting in Philadelphia

2014 Informs Annual Meeting in San Francisco
North America Meeting of the German National Academic Foundation in San Francisco
Western Finance Association Conference in Monterey
UC Berkeley: Econometrics Seminar, Risk Management Seminar, Finance Pre-Seminar

2013 University of Freiburg: Finance Seminar

2012 University of Bonn: Finance and Insurance Seminar

**Funding:**

China Merchants Bank: $460,000

**Affiliations:**

SIAM, INFORMS, SoFiE, Econometric Society, American Economic Association, American Finance Association, European Economic Association, European Finance Association

**Personal Information:**

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| Languages: | German (native), English (fluent), French (good) |
| Citizenship: | German |