

# DACHENG XIU

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## APPOINTMENTS

University of Chicago, Booth School of Business

- Professor of Econometrics and Statistics, July 2019 –
- Associate Professor of Econometrics and Statistics, 2015 – 2019
- Assistant Professor of Econometrics and Statistics, 2011 – 2015

## EDUCATION

Princeton University, Ph.D. Applied Mathematics, May 2011  
Princeton University, M.A. Applied Mathematics, June 2008  
University of Science and Technology of China, B.S. Mathematics, June 2006

## RESEARCH INTERESTS

Financial Econometrics, Empirical Asset Pricing, Machine Learning in Finance, High-Dimensional Statistics, Quantitative Finance

## PUBLICATIONS

“When Moving-Average Models Meet High-Frequency Data: Uniform Inference on Volatility,” with Rui Da, forthcoming in *Econometrica*.

“Asset Pricing with Omitted Factors,” with Stefano Giglio, *Journal of Political Economy*, Vol. 129, No 7, (2021), 1947-1990. (lead article)

- Best Conference Paper Prize at the 44<sup>th</sup> EFA

“Thousands of Alpha Tests,” with Stefano Giglio and Yuan Liao, *Review of Financial Studies*, Vol. 34, Issue 7, (2021), 3456-3496.

“Autoencoder Asset Pricing Models,” with Shihao Gu and Bryan Kelly, *Journal of Econometrics* 222 (2021), 429-450.

“Empirical Asset Pricing via Machine Learning,” with Shihao Gu and Bryan Kelly, *Review of Financial Studies*, Vol. 33, Issue 5, (2020), 2223-2273.

- 2018 Swiss Finance Institute Outstanding Paper Award
- BlackRock Research Award at the 31th Australasian Finance and Banking Conference
- 2018 Q-group Roger F. Murray First Prize
- 2018 Chicago Quantitative Alliance Annual Academic Competition Second Prize
- 2018 IQ-KAP Research Award 3. Prize

“Taming the Factor Zoo: A Test of New Factors,” with Gavin Feng and Stefano Giglio, *Journal of Finance*, Vol. 75, Issue 3, (2020), 1327-1370.

- 2018 AQR Insight Award First Prize

“High-Frequency Factor Models and Regressions,” with Yacine Aït-Sahalia and Ilze Kalnina, *Journal of Econometrics* 216 (2020), 86-105.

“A Hausman Test for the Presence of Market Microstructure Noise in High Frequency Data,” with Yacine Aït-Sahalia, *Journal of Econometrics* 211 (2019), 176-205.

“Knowing Factors or Factor Loadings, or Neither? Evaluating Estimators of Large Covariance Matrices with Noisy and Asynchronous Data,” with Chaoxing Dai and Kun Lu, *Journal of Econometrics* 208 (2019), 43-79.

“Efficient Estimation of Integrated Volatility Functionals via Multiscale Jackknife,” with Jia Li and Yunxiao Liu, *Annals of Statistics*, Vol. 47, No. 1 (2019), 156-176.

“Principal Component Analysis of High Frequency Data,” with Yacine Aït-Sahalia, *Journal of the American Statistical Association* Vol. 114, No. 525, (2019), 287-303.

“Resolution of Policy Uncertainty and Sudden Declines in Volatility,” with Dante Amengual, *Journal of Econometrics* 203 (2018), 297-315.

“Using Principal Component Analysis to Estimate a High Dimensional Factor Model with High Frequency Data,” with Yacine Aït-Sahalia, *Journal of Econometrics* 201 (2017), 384-399.

“Econometric Analysis of Multivariate Realized QML: Estimation of the Covariation of Equity Prices under Asynchronous Trading,” with Neil Shephard, *Journal of Econometrics* 201 (2017), 19-42.

“Nonparametric Estimation of the Leverage Effect: A Trade-off between Robustness and Efficiency,” with Ilze Kalnina, *Journal of the American Statistical Association* Vol. 112, No. 517, (2017), 384-396.

“Generalized Method of Integrated Moments with High Frequency Data,” with Jia Li, *Econometrica*, Vol. 84, No. 4, (2016), 1613-1633.

“Increased Correlation Among Asset Classes: Are Volatility or Jumps to Blame, or Both?” with Yacine Aït-Sahalia, *Journal of Econometrics* 194 (2016) 205-219.

“Incorporating Global Industrial Classification Standard into Portfolio Allocation: A Simple Factor-Based Large Covariance Matrix Estimator with High Frequency Data,” with Jianqing Fan and Alex Furger, *Journal of Business & Economic Statistics*, Vol. 34, No. 4, (2016), 489-503. *Big Data Special Issue*.

“A Tale of Two Option Markets: Pricing Kernels and Volatility Risk,” with Zhaogang Song, *Journal of Econometrics* 190 (2016), 176-196.

- *Dennis J. Aigner Honorable Mention* for the best paper in empirical econometrics published by the Journal of Econometrics in 2015 or 2016
- *Best Paper Award in Derivatives* at the International Symposium on Risk Management and Derivatives in 2012

“Hermite Polynomial based Expansion of European Option Prices,” *Journal of Econometrics* 179 (2014), 158-177.

“Quasi-Maximum Likelihood Estimation of GARCH Models with Heavy-Tailed Likelihoods,” with Jianqing Fan and Lei Qi, *Journal of Business & Economic Statistics*, Vol. 32, No. 2, (2014), 178-191. *Invited Paper with Discussion.*

“High Frequency Covariance Estimates with Noisy and Asynchronous Financial Data,” with Yacine Aït-Sahalia and Jianqing Fan, *Journal of the American Statistical Association*, Vol. 105, No. 492, (2010), 1504-1517.

“Quasi-Maximum Likelihood Estimation of Volatility with High Frequency Data,” *Journal of Econometrics* 159 (2010), 235-250.

### **WORKING PAPERS**

“Predicting Returns with Text Data,” with Tracy Ke and Bryan Kelly.

- *2019 CICF Best Paper Award*

“The Structure of Economic News,” with Leland Bybee, Bryan Kelly, and Asaf Manela.

“Inference on Risk Premia in Continuous-Time Asset Pricing Models,” with Yacine Aït-Sahalia and Jean Jacod.

“(Re-)Imag(in)ing Price Trends,” with Jingwen Jiang and Bryan Kelly.

“Test Assets and Weak Factors,” with Stefano Giglio and Dake Zhang.

“Disentangling Autocorrelated Intraday Returns,” with Rui Da.

### **COMMENTS & BOOK CHAPTERS**

“Comment on: Limit of Random Measures Associated with the Increments of a Brownian Semimartingale,” with Jia Li, *Journal of Financial Econometrics*, 16(4), 2018, 570-582.

“Likelihood-Based Volatility Estimators in the Presence of Market Microstructure Noise: A Review,” with Yacine Aït-Sahalia, *Handbook of Volatility Models and their Applications*, 2012, 347-361.

### **SELECTED HONORS & AWARDS**

Best Associate Editor Award, Journal of Econometrics, 2020  
Fellow of the Society for Financial Econometrics, 2019  
Best Paper Award, China International Conference in Finance, 2019  
Swiss Finance Institute Outstanding Paper Award, 2018  
AQR Insight Award First Prize, 2018  
BlackRock Research Award, the 31<sup>st</sup> Australasian Finance and Banking Conference, 2018  
Charles E. Merrill Faculty Scholar, Chicago Booth, 2017-2018  
Fellow of the Journal of Econometrics, 2017  
Best Conference Paper Prize, the 44<sup>th</sup> Annual Meeting of the European Finance Association, 2017  
Dennis J. Aigner Award (honorable mention), Journal of Econometrics, 2017  
Microsoft Azure Research Award, 2016-2017  
IBM Corporation Faculty Scholar, Chicago Booth, 2015-2016, 2016-2017  
FMC Faculty Scholar, Chicago Booth, 2012-2013  
Research Fund from Fama-Miller Center for Research in Finance, Chicago Booth, 2011-2021  
Laha Award, the Institute of Mathematical Statistics, 2010  
C.V. STARR Fellowship and Prize Scholarship, Princeton University, 2006-2007  
Guo Moruo Scholarship (*Summa Cum Laude*), University of Science and Technology of China, 2005

## **PROFESSIONAL SERVICE**

### **CO-EDITOR**

Journal of Financial Econometrics, July 2019 - June 2023

### **ASSOCIATE EDITOR**

Review of Financial Studies, July 2021 - present  
Journal of Econometrics, January 2017 – present  
Management Science, October 2019 - present  
Journal of Business & Economic Statistics, January 2019 - December 2021  
Journal of Applied Econometrics, January 2020 – present  
Econometrics Journal, January 2021 – present  
Journal of Empirical Finance, February 2019 - present  
Statistica Sinica, August 2017 - July 2020

### **OTHER VISITING POSITIONS**

Tsinghua University, PBC School of Finance, Special Term Professor, June 2019 - May 2022  
Shanghai Jiao Tong University, SAIF, Visiting Research Professor, July 2019 - June 2024  
Duke University, Department of Economics, Visiting Faculty, Fall 2015

### **PHD DISSERTATION COMMITTEE**

Yongning Wang (Morgan Stanley), Yoann Potiron (Keio University), Gavin Feng (Co-Chair, City University of Hong Kong), Likai Chen (Washington University in St. Louis), Jianeng Xu (Chicago Trading Company), David Finer (Capital Technology Solutions)

### **REFEREE**

Econometrics: Econometrica, Review of Economic Studies, Journal of Econometrics, Journal of Business & Economic Statistics, Econometric Theory, Quantitative Economics, Journal of Applied Econometrics, the Econometrics Journal, Journal of Financial Econometrics, Econometric Reviews, Economics Letters

Finance: Journal of Finance, Review of Financial Studies, Journal of Financial Economics, Annual Review of Financial Economics, Review of Finance, Management Science, Journal of Financial and Quantitative Analysis, Review of Asset Pricing Studies, Journal of Empirical Finance, European Journal of Finance, Journal of Banking and Finance

Statistics: Journal of the American Statistical Association, Annals of Statistics, Journal of the Royal Statistical Society B, Biometrika, Scandinavian Journal of Statistics, Statistical Sinica, Computational Statistics & Data Analysis, Journal of Forecasting, Journal of Time Series Analysis

Quantitative Finance: Mathematical Finance, Finance and Stochastic, Journal of Computational Finance, SIAM Journal of Financial Mathematics, Quantitative Finance

Others: Proceedings of the National Academy of Sciences, Journal of Accounting Research, Journal of Economic Dynamics and Control, US National Science Foundation, Swiss National Science Foundation, Netherlands Organization for Scientific Research Grant, Independent Research Fund Denmark, Research Grants Council of Hong Kong, National Natural Science Foundation of China

#### **CONFERENCE PROGRAM COMMITTEE**

SoFiE Machine Learning Virtual Conference (2021), Annual Conference of the International Association of Applied Econometrics (IAAE) (2019 - 2020), China International Conference in Finance (CICF) (2018 - 2021), Financial Engineering and Risk Management International Symposium (2018), FMA Conference on Derivatives and Volatility (2016, 2017, 2018), Annual Meeting of the European Finance Association (2015 - 2021), Annual Meeting of the Society of Financial Econometrics (2016, 2019, 2020), Annual Meeting of the Midwest Finance Association (2016), Asian Meeting of the Econometric Society (2013)

#### **TEACHING EXPERIENCE**

University of Chicago Booth School of Business

- 41100 Applied Regression Analysis (MBA)  
Winter 2011-2013, 2015-2018, Fall 2014
- 41902 Statistics Inference (PhD)  
Winter 2015-2018

SoFiE Financial Econometrics Summer School

- Machine Learning and Finance: the New Empirical Asset Pricing (with Bryan Kelly)  
July 23-27, 2018
- Machine Learning and Finance (with Jianqing Fan)  
August 2-6, 2021

Duke University

- Econ 883.1 Options, Futures, and Other Derivatives (Master/PhD)  
Fall 2015

Swiss Finance Institute

- Machine Learning and Asset Pricing  
October - November 2020

## PRESENTATIONS

- 2021 AFA North American Meetings (Jan 3), University of Oxford (Jan 28), Humboldt University of Berlin (Feb 4), Rutgers Business School (Mar 5), IDC Herzliya (Mar 22), Financial Risks International Forum in Paris (Keynote, Mar 26), NBER Asset Pricing (Apr 9), University of Rochester (Apr 16), Chinese University of Hong Kong (Mar 19 Economics, Apr 23 Finance), Federal Reserve Board (May 4), ITAM Business School (May 20), London Business School (May 27), Virtual Workshop on Financial Econometrics (June 14-15), SoFiE Conference (Jun 15-17), IMSI Workshop on Machine Learning and Finance (July 5-9), China International Conference in Finance (CICF, July 7-9), 14<sup>th</sup> Annual Risk Management Conference at NUS (July 29-30), European Finance Association 48<sup>th</sup> Annual Meetings (EFA, Aug 25-27), Gothenburg University (Oct 18), University of Iowa (Oct 29), Hong Kong University (Nov 17), University of Houston (Nov 19), Renmin University (Dec 3), ESSE-NUS Conference on Financial Data Analytics (TBA), Advance in Econometrics Conference at Indiana (TBA), Princeton University (TBA), Baruch College (CUNY, TBA), Stockholm University (TBA), Lund University (TBA)
- 2020 Joint Statistical Meetings (Invited Session), Citadel, European Finance Association 47<sup>th</sup> Annual Meetings (EFA), AllianceBernstein, Singapore Management University, INQUIRE Europe, Econometric Research in Finance Workshop 2020, Society of Quantitative Analysis, BlackRock, Fidelity, Wolfe Virtual Quantitative and Macro Investment Conference, East China Normal University, Boston University Questrom School of Business, PBC School of Finance, Sun Yat-sen University, SoFiE Virtual Seminar, University of Nottingham, WUSTL Olin Business School, University of Science and Technology of China
- 2019 Canadian Econometrics Study Group meeting (Plenary), SFI Research Days (Keynote), SoFiE Annual Meeting in Shanghai (Invited), 3<sup>rd</sup> Chinese Econometricians Forum (Keynote), Conference on Financial Econometrics and New Finance in Hangzhou (Keynote), SAIF International Conference on FinTech (Keynote), Northwestern University (Kellogg), University of Zurich, Hong Kong University of Science and Technology, Ohio State University, New York University (Stern), University of Pennsylvania, University of Southern California, Cheung Kong Graduate School of Business, AFA North American Meetings, GSU/RFS FinTech Conference, NBER Conference on Big Data: Long-Term Implications for Financial Markets and Firms, Risk Management and Financial Innovation Conference, 8<sup>th</sup> Annual Econometrics Workshop on Applied Econometrics and Data Science, USC Conference on Panel Data Forecasting, Market Microstructure and High Frequency Data Conference, SIAM Conference on Financial Mathematics & Engineering, Econometric Society Asian Meeting, JHU Carey Finance Conference, FinTech Symposium in Guanghua School of Management, China International Conference in Finance (CICF), NBER-NSF Time Series Conference at CUHK, European Finance Association 46<sup>th</sup> Annual Meetings (EFA), NUS Workshop on Asset Pricing and Risk Management, Big Data & Machine Learning in Economics, Finance, and Statistics, Chicago Booth Asset Pricing Conference, AI Innovations Forum, China Fintech Research Conference, Statistics Workshop at Peking University, AQR, Two Sigma, T. Rowe Price,

- Duxiaoman Financial, XY Investments LLC, Nine Martingale, Goldman Sachs Alternative Risk Premia Roundtables Forum, State of Wisconsin Investment Board
- 2018 Tilburg University, Erasmus University Rotterdam, Tinbergen Institute, Imperial College Business School, Aarhus University, Duke University, Federal Reserve Bank of Dallas, National University of Singapore, Singapore Management University, Indiana University, Rutgers, University of Cambridge, Tsinghua PBC School of Finance, City University of Hong Kong, University of International Business and Economics, Nanjing University, U.S. Securities and Exchange Commission, Financial Econometrics Conference at Toulouse School of Economics, Mind Bytes Symposium at the University of Chicago, New Aspects of Statistics, Financial Econometrics, and Data Science, Economics and Financial Econometrics in the Era of Big Data, Financial Engineering and Risk Management International Symposium (FERM), Conference on Financial Predictability and Data Science, Western Finance Association Annual Meetings (WFA), ICSA China Conference on Data Science, China International Conference in Finance (CICF), Interdisciplinary Conference on Big Data and China at Shenzhen Finance Institute, European Finance Association 45<sup>st</sup> Annual Meetings (EFA), New Methods for the Cross Section of Returns Conference, Big Data, Machine Learning and AI in Economics, Magnetar Capital Quantitative Research, Chicago Quantitative Alliance Fall 2018 Conference, 2<sup>nd</sup> Annual Global Quantitative and Macro Investing Conference in NYC, INQUIRE UK Conference in London
- 2017 Stanford University, Liverpool School of Management, Cass Business School at City, University of London, University College London, Durham Business School, Imperial College London, Nankai University, Fudan University, Renmin University of China, Peking University, Tsinghua University, Nanjing Audit University, Worcester Polytechnic Institute, Princeton-QUT-SJTU-SMU Econometrics Conference, Vienna-Copenhagen Conference on Financial Econometrics, HEC-McGill Winter Finance Workshop, Market Microstructure and High Frequency Data Conference, Asian Meeting of the Econometric Society, China Finance Review International Conference, 13<sup>th</sup> International Symposium on Econometric Theory and Applications, 1<sup>st</sup> International Conference on Econometrics and Statistics at HKUST, SoFiE Annual Meeting at NYU, INFORMS Applied Probability Society Conference, China International Conference in Finance, Joint Statistical Meetings (IMS Invited Session), University of Oregon Finance Conference, European Finance Association 44<sup>st</sup> Annual Meetings (EFA), Conference on Financial Predictability and Data Science, Annual INFORMS Meeting in Houston, New Developments in Econometrics and Time Series, Tsinghua Workshop on Big Data and Internet Economics, Fannie Mae
- 2016 University of Wisconsin-Madison (Statistics), Hong Kong University of Science and Technology, Xiamen University, University of Wisconsin-Madison (Economics), 2016 SIAM Conference on Financial Mathematics & Engineering, CEME Young Econometricians Workshop at Duke University, 5<sup>th</sup> Workshop on Algorithms for Modern Massive Data Sets at Berkeley, Carey/AQR Conference on Derivatives, The 2<sup>nd</sup> Conference on Financial Econometrics and Risk Management at the University of Western Ontario, Princeton-QUT-SJTU-SMU econometrics conference
- 2015 Toulouse School of Economics, Duke University, CEMFI Spain, Annual INFORMS Meeting in Philadelphia, NBER/NSF Time Series Conference at Vienna University, Econometrics of High-Dimensional Risk Networks Conference in Chicago, Econometric Society World Congress 2015 in Montreal, CEME Young Econometricians Workshop at Cornell University, 8<sup>th</sup> Annual

- SoFiE Conference at Aarhus University, IMS China in Kunming, Financial Econometrics Conference in Toulouse, Market Microstructure and High Frequency Data Conference in Chicago, MFA Annual Meeting in Chicago, AMS Spring Meeting on High-Frequency Problems at Michigan State University, North American Winter Meetings of the Econometric Society in Boston (AEA), Two Sigma
- 2014 Harvard/MIT Joint Econometrics Seminar, Princeton University, Purdue University, Boston University, University of Illinois at Chicago, Stevanovich Center at the University of Chicago, McGill Risk Management Conference, SoFiE Annual Meeting in Toronto, Financial Engineering and Risk Management International Symposium (FERM), 8th World Congress of the Bachelier Finance Society, Western Finance Association Annual Meetings (WFA), 10<sup>th</sup> International Symposium on Econometric Theory and Applications (SETA), 2014 China International Conference in Finance (CICF), European Finance Association 41<sup>st</sup> Annual Meetings (EFA), SIAM Conference on Financial Mathematics & Engineering (FM14)
- 2013 Northwestern University, Duke University, Brown University, Indiana University, University of Illinois at Chicago, Joint Statistical Meetings (JBES Invited Lecture), Financial Econometrics Conference at Toulouse School of Economics, High Frequency Data and High Frequency Trading Conference at University of Chicago, SoFiE Annual Meeting in Singapore, ES Asia Meeting at Singapore, 5<sup>th</sup> Annual Modeling High Frequency Data in Finance Conference
- 2012 University of Chicago, University of Montreal, CEMFI Spain, Liverpool School of Management, SoFiE Annual Meeting at Oxford, Financial Econometrics Conference at Toulouse School of Economics, Financial Engineering and Risk Management International Symposium (FERM), 2012 China International Conference in Finance (CICF)
- 2011 Northwestern University, Princeton University, Duke University, University of Chicago, Cornell, Imperial College London, Federal Reserve Bank of New York, University of Hong Kong, University of Southern California, Rutgers, Frontiers in Financial Econometrics Workshop at Queensland University of Technology, 17<sup>th</sup> International Conference on Computing in Economics and Finance at Federal Bank of San Francisco, UBS, Barclays Capital, Cornerstone Research
- 2010 Princeton University, Econometrics Society World Congress, IMS Annual Meeting, Joint Statistical Meetings (Invited Session), Workshop on Financial Econometrics at Fields Institute
- 2009 University of Chicago, The 2nd Princeton-Humboldt Finance Workshop, Joint Statistical Meetings, 1<sup>st</sup> Annual Modeling High Frequency Data in Finance Conference

## **DISCUSSIONS**

- 2021 “Bayesian Solutions for the Factor Zoo: We Just Ran Two Quadrillion Models” at NBER Asset Pricing Conference.  
 “AlphaPortfolio for Investment and Economically Interpretable AI” at AFA North American Meetings
- 2020 “Risk Factors that Matter: Textural Analysis of Risk Disclosures for the Cross-Section of Returns” at EFA 47<sup>th</sup> Annual Meetings  
 “Life Cycle Cash Flows of Ventures” at Econometric Research in Finance Workshop 2020
- 2019 “Forest through the Trees: Building Cross-Sections of Stock Returns” at Chicago Booth Asset Pricing Conference



- “Macroeconomic Risk, Expected Market Return, and the Cross-Section of Stock Returns: A Data-mining Perspective” at the China International Conference in Finance
- 2018 “The Cross-Section of Risk and Return” at EFA 45<sup>th</sup> Annual Meetings  
 “Assessing the Role of Long-run and Valuation Risks in Explaining Nominal Bond Yields” at China International Conference in Finance  
 “Shale Revolution and Shifting Crude Dynamics” at China International Forum on Finance and Policy
- 2017 “Nonparametric Option-Implied Volatility” at FMA Conference on Derivatives and Volatility  
 “Correlated High-Frequency Trading” at AFA North American Meetings  
 “Unified Inference for Nonlinear Factor Models from Panels with Fixed and Large Time Span” at MFA Annual Meeting in Chicago
- 2016 “Limit Theorems for Integrated Local Empirical Characteristic Exponents from Noisy High-Frequency Data with Application to Volatility and Jump Activity Estimation” at New Developments in Measuring & Forecasting Financial Volatility Conference at Duke/UNC  
 “How Crashes Develop: Intradaily Volatility and Crash Evolution” at FMA Conference on Derivatives and Volatility
- 2015 “Jump Regressions” at Financial Econometrics Conference at Toulouse School of Economics
- 2014 “A Spanning Series Approach to Options” at McGill Risk Management Conference  
 “Positional Portfolio Management” at EFA 41<sup>st</sup> Annual Meetings  
 “Free (Almost) Variance Insurance” at China International Conference in Finance
- 2013 “Simple Approximation Maximum Likelihood Estimation of Multivariate Jump-Diffusion Models” at Financial Econometrics Conference at Toulouse School of Economics
- 2012 “Jump Robust Two-Time Scale Covariance Estimation and Realized Volatility Budgets” at AFA North American Meetings
- 2011 “Asymptotic Theory of Maximum Likelihood Estimator for Diffusion Model”, “Density Approximations for Multivariate Affine Jump-Diffusion Processes”, and “An Investigation of Self-Exciting Market Processes using Option Prices” at 58<sup>th</sup> ISI World Statistics Congress
- 2010 “Quadratic Variation by Markov Chains” at ES North American Meetings