Yuan Liao

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EMPLOYMENT

- **Associate Professor**, July 2016-Present
  Rutgers University, Department of Economics
- **Assistant Professor**, July 2012-June 2016
  University of Maryland at College Park, Department of Mathematics
- **Postdoctoral Research Associate**, July 2010-Aug 2012
  Princeton University, Department of Operations Research and Financial Engineering

EDUCATION

- **Ph.D. in Statistics**, 2010, Northwestern University, Evanston, IL
  - Dissertation: Bayesian Analysis in Partially Identified Parametric and Nonparametric Models
  - Advisor: Wenxin Jiang
  - Committee members: Wenxin Jiang, Joel Horowitz, Thomas Severini, Elie Tamer
- **B.S. in Mathematics**, 2005, Tsinghua University, Beijing

RESEARCH INTERESTS

Bayesian inference, Econometrics

- High dimensional structured modeling
- Financial factor pricing models
- Non-parametric Bayesian inference
- Partial identification, Nonparametric instrumental variables, Endogeneity

PUBLICATIONS

1. Lee, S., **Liao, Y.**, Seo, M. and Shin, Y. (2017) Oracle estimation of a change point in high dimensional quantile regression. *Journal of the American Statistical Association,* forthcoming.

2. Chernozhukov, V., Hansen, C. and **Liao, Y.** (2017) A Lava attack for the recovery of sums of sparse and dense signals. *Annals of Statistics,* **45**, 39-76.

3. Bai, J. and **Liao, Y.** (2016) Efficient estimation of approximate factor models via regularized maximum likelihoods. *Journal of Econometrics,* **191**, 1-18.

4. Fan, J., **Liao, Y.** and Wang, W.(2016) Projected principal components analysis in factor models. *Annals of Statistics,* **44**, 219-254.

5. Fan, J., **Liao, Y.** and Yao, J.(2015) Power enhancement in high-dimensional cross sectional tests. *Econometrica,* **83**, 1497-1541.

6. Fan, J., **Liao, Y.** and Shi, X.(2015) Risks of large portfolios. *Journal of Econometrics,* **186**, 367-387.

7. Fan, J. and **Liao, Y.** (2014) Endogeneity in high dimensions. *Annals of Statistics,* **42**, 872-917.

8. Fan, J., **Liao, Y.** and Mincheva, M.(2013) Large covariance estimation by thresholding principal orthogonal complements. *Journal of the Royal Statistical Society Series B (**with discussion**),* **75**, 603-680
   Reviewed by 7 screeners, 5 referees and 1 post-refereeing screener, read before Royal Statistical Society on 13 February 2013.

9. Fan, J., **Liao, Y.** and Mincheva, M.(2011) High dimensional covariance matrix estimation in approximate factor models. *Annals of Statistics,* **39**, 3320-3356.

10. **Liao, Y.** and W. Jiang (2011) Posterior consistency of nonparametric conditional moment restricted models. *Annals of Statistics,* **39**, 3003-3031.

11. **Liao, Y.** and W. Jiang (2010) Bayesian analysis in moment inequality models.
    Annals of Statistics. **38**, 275-316.

Book Chapters and Overviews

1. Fan, J., **Liao, Y.** and Liu, H. (2016) An overview on high-dimensional covariance and precision matrix estimation. *The Econometrics Journal* **19**, C1-C32.

2. Fan, J., **Liao, Y.** and Liu, H. (2015) Approaches to high-dimensional covariance and precision matrix estimation. in *Financial Signal Processing and Machine Learning*, edited by A.N. Akansu, S.R. Kulkarni, D. Malioutov, I. Pollak. Wiley

3. Bai, J., **Liao, Y.** and Yang, J. (2014) Unbalanced panel data models with interactive effects. in *The Oxford Handbook of Panel Data*, chapter 5, edited by Badi Baltagi.

FELLOWSHIPS AND HONORS

- Research and Scholarship Award, University of Maryland, 2015
- US Junior Oberwolfach Fellow, 2013
- Journal of the Royal Statistical Society-B read paper, 2013
- IMS New Researchers Conference, 2013
- Dissertation Year Fellowship, Northwestern University, 2010

PRESENTATIONS

- The factor-Lasso and k-step bootstrap for inference in economic applications
  (2016) *Stevens Institute of Technology, Toronto*
- High dimensional sparse modeling in financial econometrics
  (2016) *Boston University, Emory, Rutgers*
- A Lava attack for sparse and dense signals
  (2016) Midwest Econometrics Group, Urbana-Champaign
  (2015) Economic and Econometric Applications of Big Data, Cambridge, UK
- Power enhancement test of high dimensional CAPM models
  (2014) Midwest Econometrics Group, Iowa City
  (2014) Econometric Society summer meeting, Minneapolis
  (2013) Stevanovich Center for Financial Mathematics, University of Chicago
  (2013) Midwest Economics Group, Columbus
- Semiparametric Bayesian partially identified models
  (2014) ISBIS meeting, Durham
  (2014) Econometric Society winter meeting, Philadelphia
  (2013) Oberwolfach workshop on partial identification.
  (2013) *UIUC; Tsinghua*
- Efficient estimation of approximate factor models
  (2014) *MIT; George Washington; Boston University*
  (2013) *George Mason; Georgetown*
  (2013) IMS New Researchers Conference, Montreal
  (2013) Joint Statistical Meetings, Montreal
- High dimensional covariance matrix estimation in approximate factor models
  (2012) Midwest Econometrics Group, Lexington, Kentucky
  (2011) *Maryland; Bonn; Cornell; Northwestern*
  (2011) 3rd Humboldt-Princeton biennial joint conference, Berlin

- Ultra high dimensional variable selection with endogenous variables
  (2012) *Wilks seminar, Princeton University*
  (2011) Meetings of the Midwest Econometrics Group, Chicago
  (2011) Econometric Society Summer Meeting, St. Louis.
  (2011) Joint Statistical Meetings, Miami

- Posterior consistency of nonparametric conditional moment restricted models
  (2010) CEMMAP Conference: "Recent developments in nonparametric instrumental variable methods", London
  (2010) Joint Statistical Meetings, Vancouver
  (2009) *Northwestern*

- Bayesian analysis in moment inequality models
  (2010) Econometric Society World Congress, Shanghai
  (2010) *Tilburg; Chicago Booth; Minnesota*
  (2009) International Workshop on Objective Bayes Methodology, Philadelphia (Poster)
  (2009) *Hong Kong UST; Chinese University of Hong Kong*
  (2008) *Northwestern*

- Bayesian analysis of risk for data mining based on empirical likelihood
  (2010) *Rutgers*

Keynote
(2013) *Large covariance estimation by thresholding principal orthogonal complements*
Royal Statistical Society Research Section

Invited Discussant
(Sep 2011) *Testing High Dimensional CAPM Model*
Seventh Cambridge-Princeton Conference, Princeton University Bendheim Center for Finance

TEACHING

- Rutgers University, 2016-Present
  ECON 506: Advanced Economic Statistics
  ECON 322: Introduction to Econometrics

- University of Maryland at College Park, 2012-2016
  STAT 401: Introduction to Probability and Statistics II
  STAT 440: Sampling Theory
  STAT 750: Multivariate Analysis
  Research Interactive Teams: High-dimensional statistics

- Northwestern University, 2010
  STAT 202: Introduction to Statistics

SERVICE AND OUTREACH

- Program Committee and Panel

  (2016) 9th Annual Conference of The Society for Financial Econometrics (SoFiE)

  (2016) National Science Foundation (NSF) panelist

- External Reviewing for Research Grants Proposals

  (2017, 2015) Research Grants Council (RGC) of Hong Kong

  (2015) Natural Sciences and Engineering Research Council of Canada (NSERC)

- Reviewing Activities for Journals and Presses:

  Econometrica, Journal of Econometrics, Annals of Statistics, Biometrika, Electronic Journal of Statistics, The Econometrics Journal, Mathematical Finance, JASA, Statistica Sinica, Journal of Computational and Graphical Statistics, Econometric Theory, Journal of Multivariate Analysis, JRSS-B, Psychometrika, Review of Economic Studies, Journal of Statistical Planning and Inference, Journal of Business and Economic Statistics, Statistics and Computing, Statistics and Probability Letters, Journal of Statistical Theory and Practice, Journal of Nonparametric Statistics

- University Committees

  (2017) Policy/Admission/ executive committee, Department of Economics, Rutgers University

  (2015) Policy committee, Department of Math, University of Maryland

STUDENTS ADVISING

- As committee chair:

  Ph.D. students: Jaeheon Jung, Wanjun Li (2017), all from Rutgers.

  Master students: Qi Liu, Lujia Su (2015, UMaryland)

- As committee member:

  Ph.D. students:

  (2017) Jaeheon Jung (from Rutgers University)

  (2013-2015) Yimei Fan, Bin Han, Alex Cloninger, Xuan Liu, Chen Dong, Kevin Dayaratna, Yue Tian, Zi Ding, David Shaw (all from UMaryland)

PROFESSIONAL MEMBERSHIPS

Econometric Society, 2009-Present
American Statistical Association, 2010-Present
International Indian Statistical Association, 2013-2015
Institute of Mathematical Statistics, 2010-2011