P. Richard Hahn

Arizona State University
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Research areas

Bayesian methods, causal inference, foundations of statistics, nonlinear regression, Monte Carlo methods, applications to social science.

Employment

Associate Professor of Statistics, Arizona State University, Effective August 16th, 2017.

Associate Professor of Econometrics and Statistics, University of Chicago Booth School of Business, July 2015 - present

Assistant Professor of Econometrics and Statistics, University of Chicago Booth School of Business, July 2011 - July 2015.

Research intern, Yahoo! Research, Summer 2008.

Consulting

Rise Science, 2016, data analytics for personalized sleep coaching.
GN Hearing, 2015, hearing aid fitting software defaults.
Deloitte, December 2009 - November 2012, see Harvard Business Review, April 2013.

Education

Ph.D., Department of Statistical Science, Duke University, 2011.

M.Sc., Mathematics with Operations Research and Statistics Option, New Mexico Institute of Mining and Technology, 2007.

B.A., Economics-Philosophy, Columbia University, 2005.

Research papers

Dissertation

Probability models for targeted borrowing of information. Advisor: Sayan Mukherjee.

Peer-reviewed articles

1. P. Richard Hahn, Stephen G. Walker, and Ryan Martin. On recursive predictive distributions. Forthcoming, JOURNAL OF THE AMERICAN STATISTICAL ASSOCIATION.
2. P. Richard Hahn, Carlos M. Carvalho, Jingyu He, and David Puelz. Regularization and confounding in linear regression for treatment effect estimation. Forthcoming, BAYESIAN ANALYSIS.
3. David Puelz, P. Richard Hahn, and Carlos M. Carvalho. Variable selection in seemingly unrelated regressions with random predictors. Forthcoming, BAYESIAN ANALYSIS.
4. P. Richard Hahn, Jingyu He, and Hedibert Lopes. Bayesian factor model shrinkage for linear IV regression with many instruments. Forthcoming, JOURNAL OF BUSINESS AND ECONOMIC STATISTICS.
5. P. Richard Hahn, Jared S. Murray, and Ioanna Manolopoulou. A Bayesian partial identification approach to inferring the prevalence of accounting misconduct. JOURNAL OF THE AMERICAN STATISTICAL ASSOCIATION, 111 (513), 14-26, 2016.
6. P. Richard Hahn, Carl F. Mela, and Indranil Goswami. A Bayesian hierarchical model for inferring player strategy types in a number guessing game. ANNALS OF APPLIED STATISTICS, Vol. 9, No. 3, 1459-1483.
7. P. Richard Hahn and Carlos M. Carvalho. Decoupling shrinkage and selection in Bayesian linear models: a posterior summary perspective. JOURNAL OF THE AMERICAN STATISTICAL ASSOCIATION, 110 (509), 435-448, 2015.
8. P. Richard Hahn, Carlos M. Carvalho, and Sayan Mukherjee. Partial factor modeling: predictor-dependent shrinkage for linear regression. JOURNAL OF THE AMERICAN STATISTICAL ASSOCIATION, 108 (503), 999-1008, 2013.
9. P. Richard Hahn, Carlos M. Carvalho, and James G. Scott. A sparse factor analytic probit model for congressional voting patterns. JOURNAL OF THE ROYAL STATISTICAL SOCIETY: SERIES C (Applied Statistics), 61 (4), 619-635, 2012.

Invited Revisions

1. P. Richard Hahn, Jingyu He, and Hedibert Lopes. Efficient sampling for Gaussian linear regression with arbitrary priors. JOURNAL OF COMPUTATIONAL AND GRAPHICAL STATISTICS.
2. P. Richard Hahn. Predictivist Bayes density estimation. JOURNAL OF STATISTICAL PLANNING AND INFERENCE.
3. Lane F. Burgette and P. Richard Hahn. A symmetric prior for multinomial probit models. BAYESIAN ANALYSIS.

Submitted Manuscripts

1. P. Richard Hahn, Jared Murray, and Carlos M. Carvalho. Bayesian regression tree models for causal inference: regularization, confounding, and heterogeneous effects.

Technical reports and other

1. Michelle Xia and P. Richard Hahn. A finite mixture model approach to regression under covariate misclassification.
2. Joseph Gerakos, P. Richard Hahn, Andrei Kovrijnykh, and Frank Zhou. To what extent do going concern opinions induce bankruptcy?
3. P. Richard Hahn. Review of ``Bayesian inference in the social sciences". JOURNAL OF THE AMERICAN STATISTICAL ASSOCIATION, 110 (512), 1819, 2015.
4. P. Richard Hahn. A note on the risk of borrowing information. September 2015.
5. P. Richard Hahn and Lane F. Burgette. An approximate likelihood for simultaneous nonlinear quantile regression. August 2013.

Seminar and conference presentations

1. Bayesian causal forests. RAND CORPORATION, June 2017.
2. Bayesian causal forests. ICSA Conference, June 2017.
3. Bayesian causal forests. ISBIS Conference at IBM, June 2017.
4. Bayesian causal forests. VIRGINIA TECH, Department of Statistics, January 2017.
5. Bayesian causal forests. UNIVERSITY OF NEW MEXICO, Department of Mathematics and Statistics, December 2016.
6. Bayesian causal forests. ARIZONA STATE UNIVERSITY, Department of Mathematics and Statistics, October 2016.
7. Bayesian causal forests. NORTHERN ILLINOIS UNIVERSITY, Department of Statistics, October 2016.
8. A bivariate treed linear model for treatment effect estimation. JOINT STATISTICAL MEETINGS, Chicago, IL, August 2016.
9. A bivariate treed linear model for treatment effect estimation. SEMINAR ON BAYESIAN INFERENCE IN ECONOMETRICS AND STATISTICS, University of Pennsylvania, April 2016.
10. Bayesian treatment effect estimation with many potential confounders. UNIVERSITY OF MONTREAL, Department of Economics, May 2016.
11. Bayesian treatment effect estimation with many potential confounders. UNIVERSITY OF MICHIGAN, Interdisciplinary Seminar in Quantitative Methods, March 2016.
12. Bayesian treatment effect estimation with many potential confounders. BRIGHAM YOUNG UNIVERSITY, Department of Statistics, February 2016.
13. Bayesian treatment effect estimation with many potential confounders. NEW MEXICO INSTITUTE OF MINING AND TECHNOLOGY, Department of Mathematics, January 2015.
14. Bayesian treatment effect estimation with many potential confounders. UNIVERSITY OF NEW MEXICO, Department of Mathematics and Statistics, January 2015.
15. Shrinkage and computation for IV regression with many instruments. UNIVERSITY OF WISCONSIN MILWAUKEE, Lubar School of Business, December 2015.
16. Bayesian treatment effect estimation with many potential confounders. JOINT STATISTICAL MEETINGS, Seattle, WA, August 2015.
17. Uncertainty assessment via iterated simulated learning. FACEBOOK CORE DATA SCIENCE GROUP, July 2015.
18. A de Finetti kernel density estimator: Bayesian model specification via backward induction. INDIANA UNIVERSITY, Department of Statistics, November 2014.

19. Statistical issues in behavioral economics modeling: beauty contest data. California Institute of Technology Microeconomics Seminar, June 6, 2014.
20. de Finetti theorems for data analysis. Seminar on Bayesian Inference in Econometrics and Statistics, Chicago IL, May 3, 2014.
21. Simulation-based classification of hand-written characters. University of Chicago Statistics Department Consulting Seminar, November 26, 2013.
22. Modular prior for Bayesian inference in partially identified models. Purdue University Department of Economics, September 14, 2013.
23. Simulation-based classification of hand-written characters. Classification Society Meeting, June 13, 2013.
24. Decoupling shrinkage and selection for linear models. USC Marshall School of Business Statistics Seminar, May 3, 2013.
25. Decoupling shrinkage and selection for linear models. University of Texas McCombs School of Business, April 11, 2013.
26. Decoupling shrinkage and selection for linear models. University of Illinois Urbana-Champaign Department of Statistics, April 4, 2013.
27. Decoupling shrinkage and selection for linear models. Virginia Tech, March 28, 2013.
28. Decoupling shrinkage and selection for linear models. Iowa State University Department of Statistics, March 25, 2013.
29. Factor model shrinkage for Bayesian IV models with many instruments. International Society for Bayesian Analysis World Meeting, Kyoto, Japan, June 2012.
30. Partial factor regression. International Society for Bayesian Analysis World Meeting, Benidorm, Spain, June 2010.
31. A semiparametric model for assessing cognitive hierarchy theories of beauty contest games. Seminar on Bayesian Inference in Econometrics and Statistics, Austin, Texas, May 2010.
32. Coherence, risk consistency and cross-validation. Colorado School of Mines Department of Mathematics and Computer Science, April 2010.

Professional activities

Associate editor for Journal of the American Statistical Association, Reviews.

Refereeing

Annals of Applied Statistics, Artificial Intelligence and Statistics (AIStats)
Bayesian Analysis, Biometrics, Biometrika, Canadian Journal of Statistics
International Statistical Review, Journal of the American Statistical Association
Journal of Applied Econometrics, Journal of Business and Economic Statistics
Journal of Econometrics, Journal of Machine Learning Research, Marketing Science,
Neural Information Processing Systems (NIPS)

Graduate student advising

1. Indranil Goswami, Chicago Booth Marketing Ph.D., 2015 (informal).
2. Frank Zhou, Booth Accounting Ph.D., 2016, committee member.
3. Christina Fan, Masters of Science 2016, Physical Science Division, Research supervisor.
4. David Puelz, McCombs School of Business, University of Texas, Ph.D. (expected 2017), committee member.

5. Jingyu He, Masters Degree, Department of Statistics, 2016 and Booth Statistics Ph.D. (expected 2021), advisor.

Conference organization

AISTATS 2013
SEMINAR ON BAYESIAN INFERENCE IN ECONOMETRICS AND STATISTICS, 2014
CENTER FOR ACCOUNTING RESEARCH AND EDUCATION Conference on Fraud, 2016