Sameer K. Deshpande

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CONTACT

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RESEARCH INTERESTS

Bayesian hierarchical modeling. Bayesian treed regression. Model selection. Causal inference. Applications in public health and sports.

EMPLOYMENT

University of Wisconsin–Madison, Dept. of Statistics — Madison, WI
Assistant Professor — August 2021 – present

Massachusetts Institute of Technology, CSAIL — Cambridge, MA
Postdoctoral Associate — September 2018 – August 2021
Supervisor: Tamara Broderick

EDUCATION

University of Pennsylvania, The Wharton School — Philadelphia, PA
Ph.D. Statistics — May 2018
Thesis Title: "Bayesian model selection and estimation without MCMC"
Thesis Supervisors: Ed George and Veronika Ročková

Massachusetts Institute of Technology — Cambridge, MA
S.B. Mathematics — June 2013

PRE-PRINTS

Deshpande, S.K., Bai, R., Balocchi, C., Starling, J.E., and Weiss, J. (2020). "VCBART: Bayesian trees for varying coefficients." [arXiv:2003.06416].
Code available at `https://github.com/skdeshpande91/VCBART`.

Stephenson, W.T., Ghosh, S., Nguyen, T.D., Yurochkin, M, **Deshpande, S.K.**, and Broderick, T. (2021). "Measuring the sensitivity of Gaussian processes to kernel choice." [arXiv:2106.06510]

Trippe, B.L. **Deshpande, S.K.**, and Broderick, T. (2021). "Confidently comparing estimators with the c-value." [arXiv:2102.09705].

Balocchi, C., **Deshpande, S.K.**, George, E.I., and Jensen, S.T. (2020). "Crime in Philadelphia: Bayesian clustering with particle optimization." [arXiv:1912.00111].

PUBLICATIONS

Jin, S., Rabinowitz, A.R., Weiss, J., **Deshpande, S.K.**, Gupta, N., May, R.A.B., and Small, D.S. (2011). "Retrospective survey of youth sports participation: development and assessment of reliability using school records." *PLOS ONE* (Accepted).

Weiss, J., Rabinowitz, A.R., **Deshpande, S.K.**, Hasegawa, R.B., and Small, D.S. (2021). "Collision sports participation and cognitive aging among Swedish twins." *American Journal of Epidemiology* DOI:10.1093/aje/kwab177.

Ghosh, S., Stephenson, W.T., Nguyen, T.D., **Deshpande, S.K.**, and Broderick, T. (2020). "Approximate cross-validation for structured models." *NeurIPS 2020*

[arXiv:200612669].

Hasegawa, R.B, **Deshpande, S.K.**, Rosenbaum, P.R., Small, D.S. (2020). "Causal inference with two versions of treatment." *Journal of Educational and Behavioral Statistics*. 45(4): 426 – 445. DOI: 10.3102/1076998620914003. [arXiv:1705.03918]

Deshpande, S.K., Hasegawa, R.B., Weiss, J., and Small, D.S. (2020). "The association between football participation in adolescence and mental health in early adulthood." *PLOS ONE*. 15(3): 1 – 14. DOI: 10.1371/journal.pone.0229978.

Deshpande, S.K. and Evans, K.E. (2020). "Expected hypothetical completion probability." *Journal of Quantitative Analysis in Sports*. 16(2): 85 – 94
DOI: 10.1515/jqas-2019-0050. [arXiv:1910.12337].

Gaulton, T.G., **Deshpande, S.K.**, Small, D.S., Neuman, M.D. (2020). "Observational study of the association between participation in high school football and self-rated health, obesity, and pain in late adulthood." *American Journal of Epidemiology*. 186(6): 592 – 601 DOI: 10.1093/aje/kwz260.

Deshpande, S.K., Ročková, V., George, E.I. (2019) "Simultaneous variable and covariance selection with the multivariate spike-and-slab LASSO." *Journal of Computational and Graphical Statistics*. 28(4): 921 – 931. DOI:10.1080/10618600.2019.1593179. [arXiv:1708.08911].
Code available at: `https://github.com/skdeshpande91/multivariate_SSL`

Deshpande, S.K. and Wyner, A.J. (2017). "A hierarchical Bayesian model of pitch framing." *Journal of Quantitative Analysis in Sports*. 13(3): 95 – 112. **Editor's Choice article**. DOI: 10.1515/jqas-2017-0027. [arXiv:1704.00823].

Deshpande, S.K., Hasegawa, R.B., Rabinowitz, A.R., Whyte, J., Roan, C.L., Tabatabaei, A., Baiocchi, M., Karlawish, J.H., Master, C.L., and Small, D.S. (2017). "Association of playing high school football with cognition and mental health later in life." *JAMA Neurology*. 74(8): 909 – 918. DOI:10.1001/jamaneurol.2017.1317.

Deshpande, S.K. and Jensen, S.T. (2016). "Estimating an NBA player's impact on his team's chances of winning," *Journal of Quantitative Analysis in Sports*. 12(2): 51 – 72. **Editor's Choice article**. DOI:10.1515/jqas-2015-0027.[arXiv:1604.03186]

HONORS & AWARDS

Significant Contributor Award, ASA Section on Statistics in Sports (2021)

Third Prize, Ruth and William Silen, M.D. Poster Award, New England Science Symposium (2019)

Finalist, National Football League Big Data Bowl (2019)

Deming Student Scholar Award, Deming Conference on Applied Statistics. (2017)

J. Parker Bursk Memorial Award for excellence in research, Statistics Department, Wharton. (2017)

Donald S. Murray Prize for excellence in teaching, Statistics Department, Wharton (2016)

Wharton Doctoral Program Fellowship, Wharton (2013).

Travel Awards: O'Bayes (2017), BNP12 (2019), O'Bayes (2019), Bayes Comp (2020)

TEACHING

University of Wisconsin – Madison

STAT 479: *Introduction to Bayesian Data Analysis* Fall 2021

University of Pennsylvania

STAT 621: *Accelerated Regression Analysis for Business* Teaching Assistant. Fall 2016 – 17.

STAT 613: *Regression Analysis for Business*. Teaching Assistant. Fall 2014 – 15, 2017.

STAT 431: *Statistical Inference*. Teaching Assistant. Spring 2016.

STAT 432: *Mathematical Statistics*. Teaching Assistant. Spring 2015.

Massachusetts Institute of Technology

18.05: *Introduction to Probability and Statistics*. Teaching Assistant. Spring 2013.

Other

Wharton Moneyball Academy. Instructor. Summer 2014 – 18
Designed and taught an introductory `R` *course for high school students. Material available at* `https://skdeshpande91.github.io/wharton_moneyball/`

DEPARTMENT SEMINARS

The Multivariate Spike-and-Slab LASSO – Loyola University of Chicago (Mathematics & Statistics, October 2021)

Revisiting pitch framing with Bayesian Additive Regression Trees – University of Virginia (Sports Analytics Lab, September 2021)

VCBART: Bayesian trees for varying coefficients – Boston University (Biostatistics, December 2020), Wake Forest University (Mathematics, December 2020), University of Washington (Statistics, January 2021), Yale (Statistics & Data Science, January 2021), Texas A&M University (Statistics, January 2021), National University of Singapore (Statistics, January 2021), Texas State University (Mathematics, January 2021), University of Wisconsin – Madison (February 2021).

Estimating the health consequences of playing football using observational data – University of St. Thomas (September 2020)

Bayesian clustering with particle optimization – UT Austin (January 2020), LSU HSC New Orleans (January 2020)

CONFERENCE TALKS

Revisiting pitch framing with Bayesian Additive Regression Trees – JSM 2021

VCBART: Bayesian trees for varying coefficients – JSM 2020, SBIES 2021, ESOBE 2021

Approximate multiple shrinkage for clustered regression – BNP 2019.

Bayesian spatial clustering with particle optimization – JSM 2018.

Expected hypothetical completion probability – CMU Sports Analysis Conference 2019.

Estimating the health consequences of playing football using observational data: challenges, lessons learned, and new directions – JSM 2019, Ohio State Bayesian Causal Inference Workshop 2019, NESS 2019, CMU Sports Analytics Conference 2018

Simultaneous variable and covariance selection with the multivariate spike-and-slab LASSO – ISBA 2018, Eco Sta 2018, BayesComp 2018, SBIES 2018, CMStatistics 2017, JSM 2017

A hierarchical model of pitch framing – JSM 2016, NESSIS 2015

Estimating an NBA player's impact on his team's chances of winning – JMM 2015, JSM 2014

SERVICE

Workshop organizer:

Your model is wrong: robustness & misspecification in probabilistic modeling
NeurIPS 2021 Workshop December 2021

Perspectives in statistical modeling and inference
A workshop in honor of Ed George's 70th birthday December 2021

Journal Reviewer: Annals of Applied Statistics, The American Statistician, Journal of Computational and Graphical Statistics, Bayesian Analysis, Statistics and Computation, Journal of Multivariate Analysis, Journal of Quantitative Analysis in Sport, PLoS One, Harvard Data Science Review

Conference Reviewer: BNP@NeurIPS 2018, AISTATS 2019, ICML 2019, UAI 2019, NeurIPS 2019, AAAI 2020, AISTATS 2020