BO NING

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APPOINTMENTS

Visiting Assistant Professor, Department of Statistics, University of California, Davis *2021–Current*

The Foundation Sciences Mathématiques de Paris Postdoctoral Fellow,
Laboratoire de Probabilités, Statistique et Modélisation, Sorbonne Université, France *2020–2021*
Advisor: Dr. Ismaël Castillo

Postdoctoral Associate, Department of Statistics and Data Science, Yale University *2018–2020*
Advisor: Dr. Jessi Cisewski-Kehe

EDUCATION

Ph.D., Statistics, North Carolina State University *2014–2018*
Advisors: Drs. Peter Bloomfield and Subhashis Ghoshal

M.S., Economics, North Carolina State University *2011–2013*
Advisor: Dr. Atsushi Inoue

RESEARCH INTERESTS

Astrostatistics, Bayesian asymptotics, causal inference and missing data analysis, high-dimensional and nonparametric analysis, multiple testing, and time series analysis.

RESEARCH PAPERS

Publications

- **Bo Ning**, Seonghyun Jeong, and Subhashis Ghosal, 2020. Bayesian linear regression for multivariate response under group sparsity. *Bernoulli*, 26(3):2353–2382.
- Ryan Martin and **Bo Ning**, 2020. Empirical priors and coverage of posterior credible sets for a sparse normal mean model. *Sankhya A (the special issue dedicated to Jayanta K. Ghosh)*, 82:477–498.
- **Bo Ning**, Alexander Wise, Jessi Cisewski-Kehe, Sarah Dodson-Robinson, and Debra Fischer, 2019. Identifying activity-sensitive spectral lines: A Bayesian variable selection approach. *The Astronomical Journal*, 158(5):15 pages.
- Shubham Kanodia, Angie Wolfgang, Gudmundur K. Stefansson, **Bo Ning**, and Suvrath Mahadevan, 2019. Mass-Radius relationship for M dwarf exoplanets: Comparing nonparametric and parametric methods. *The Astrophysical Journal*, 882(1):14 pages.
- **Bo Ning**, Subhashis Ghosal, and Jewell Thomas, 2019. Bayesian method for causal inference in spatially-correlated multivariate time series. *Bayesian Analysis*, 14(1):1–28.

· **Bo Ning**, Angie Wolfgang, and Sujit Ghosh, 2018. Predicting exoplanet masses and radii: A nonparametric approach. *The Astrophysical Journal*, 869(5):16 pages.

Manuscripts

· **Bo Ning**, 2021+, Spike and slab Bayesian sparse principal component analysis. *arXiv:2102.00305 Under Review.*

· **Bo Ning and Ismaël Castillo**, 2021+, On the joint Berstein-von Mises phenomenon and sup-norm contraction rate for Bayesian Cox proportional hazard models. *In Preparation.*

Software packages

· **Bo Ning**, 2021. VBsparsePCA: The variational Bayesian method for sparse PCA. *CRAN.*

· Shubham Kanodia, Angie Wolfgang, Gudmundur K. Stefansson, **Bo Ning**, Suvrath Mahadevan, 2019. MRExo: Non-parametric mass-radius relationship for exoplanets. *Astrophysics Source Code Library, record ascl:1912.020.*

PRESENTATIONS AND WORKSHOPS

Presentations

· (*Contributed talk*) Mirror workshop of ISBA 21, CIRM, Marseille, France, June 28-July 2, 2021. *On the joint Bernstein-von Mises phenomenon and sup-norm contraction rate of Bayesian Cox proportional hazard models.*

· (*Contributed talk*) JDS2021: 52nd Statistics Days of the French Statistical Society, Nice, France, June 7-11, 2021. *Disentangling stellar-activity and planetary signals using Bayesian high-dimensional analysis.*

· (*Invited talk*) Joint Statistical Meeting, Virtual Conference, August 01-06, 2020. *Disentangling stellar activity and planetary signals using Bayesian high-dimensional analysis.*

· (*Contributed talk*) 235th Meeting of the American Astronomical Society, Honolulu, HI, January 04-08, 2020. *Identifying activity-sensitive spectral lines: A Bayesian variable selection approach.*

· (*Invited talk*) Joint Statistical Meeting, Denver, CO, July 27-August 01, 2019, *Bayesian method for causal inference in spatially-correlated multivariate time series.*

· (*Invited talk*) Jaguar Land Rover's global headquarters, Coventry, UK, July 01, 2019, *Bayesian method for causal inference in spatially-correlated multivariate time series.*

· (*Poster*) O'Bayes Meeting, University of Warwick, UK, June 28-July 02, 2019, *Disentangling stellar activity and planetary signals using Bayesian high-dimensional analyses.*

· (*Contributed talk*) 12th Bayesian Nonparametrics Conference, Oxford, UK, June 24-28, 2019, *Bayesian high-dimensional analyses for a multivariate linear regression model and a sparse spiked-covariance model.*

· (*Poster*) Statistics Conference, in honor of Aad van der Vaart's 60th Birthday, Leiden, the Netherlands, June 17-21, 2019, *Bayesian linear regression for multivariate response under group sparsity.*

· (*Invited talk*) Department Seminar, Department of Statistics, North Carolina State University, May 9, 2019, *Disentangling between stellar activity and planetary signals using a Bayesian approach for sparse PCA.*

· (*Contributed talk*) The Sixth Boston Area Exoplanet Science Meeting, Harvard/Center for Astrophysics, April 5, 2019, *Predicting exoplanet masses and radii: A nonparametric approach.*

· (*Poster*) NextGen: Data Science Day, New England Statistical Society, Yale University, October 27, 2018, *Bayesian methods for high-dimensional data analysis.*
· (*Seminar*) Exoplanet Seminar, Department of Astronomy, Yale University, October 2, 2018, *Predicting exoplanet masses and radii: A nonparametric approach.*
· (*Poster*) O'Bayes 2017 Meeting, Austin, TX, December 10-13, 2017, *Bayesian multivariate linear regression with unknown correlated errors under group sparsity.*
· (*Contributed talk*) 3rd Workshop on Extreme Precise Radius Velocities (EPRV), Penn State University, August 14-17, 2017, *Predicting exoplanet masses and radii: A nonparametric approach.*
· (*Invited talk*) ASTRO Transition Workshop, SAMSI, NC, May 8-10, 2017, *Predicting exoplanet masses and radii: A nonparametric approach.*
· (*Poster*) Joint Statistical Meeting, Baltimore, August, 2017, *Predicting exoplanet masses and radii: A nonparametric approach.*
· (*Invited talk*) Maxpoint Research Day, Maxpoint Interactive Inc., Morrisville, NC, March, 2016, *Bayesian method for causal inference in spatially-correlated multivariate time series.*
· (*Poster*) Joint Statistical Meeting, Chicago, August, 2016, *Bayesian method for causal inference in spatially-correlated multivariate time series.*
· (*Contributed talk*) ICSA Applied Statistics Symposium, Atlanta, June 12-15, 2016, *Bayesian method for causal inference in spatially-correlated multivariate time series.*
· (*Poster*) Graduate Student Research Symposium, the Graduate School of NC State University, March, 2016, *Bayesian method for causal inference in spatially-correlated multivariate time series.*
· (*Contributed talk*) International Conference on Advances in Interdisciplinary Statistics and Combinatorics, Greensboro, NC, September 30-Oct 2, 2016, *Bayesian inference for generalized extreme value distribution with Gaussian copula dependence.*

Workshops

· Foundations of Bayesian Inference for Complex Statistical Models, Oberwolfach Workshop, Germany, 2–8 May, 2021
· ASTRO: Astrophysical Population Emulation and Uncertainty Quantification, SAMSI, NC, April 3–7, 2017
· ASTRO: Hierarchical Bayesian Modeling of Exoplanet Populations (by invitation only), SAMSI, NC, Oct 17–28, 2016
· Statistical, Mathematical and Computational Methods for Astronomy (ASTRO), SAMSI, NC, August 22–26, 2016

TEACHING EXPERIENCE

Guest instructor

· ExoStatistics: Exploring Extrasolar Planets with Data Science, Yale University *(Undergraduate level)*, April 23, 2019

Lab instructor

· Experimental Statistics for Biological Sciences, NCSU *(Ph.D. and Master's levels)*, Fall, 2015; Spring, 2016; Fall, 2016; and Fall, 2017

Teaching assistant (online course)

· SAS Programming, NCSU *(Master's level)*, Fall, 2014 and Spring, 2015

Teaching assistant (in-person course)

· SAS Programming, NCSU *(Master's level)*, Summer, 2014
· Statistical Practice (Consulting), NCSU *(Ph.D. and Master's levels)*, Spring, 2016; Spring, 2017; and Spring, 2018

Teacher training programs

· Certificate of Accomplishment in Teaching (CoAT) program, the Graduate School, NCSU, 2016
· Graduate Student Summer Teaching Institute, the Graduate School, NCSU, June 9–11, 2014

AWARDS AND MEMBERSHIPS

Awards

· The Foundation Sciences Mathématiques de Paris Postdoctoral Fellowship, 2020
· IMS New Researcher Travel Award, 2019
· Yale University Postdoctoral Scholars Travel Fund Award, 2019
· Travel Support for O'Bayes Meeting, 2019
· ISBA Travel Award for Attending the 12th International Conference on Bayesian Nonparametrics, 2019
· Travel Grant for Attending Aad van der Vaart's 60th Birthday Conference, 2019
· MassMutual Poster Award, Honorable Mention (Professional Category), NESS NextGen: Data Science Day at Yale University, October 27, 2018
· O'Bayes Meeting Travel Award, 2017
· Outstanding Teaching Assistant Award, Department of Statistics, NCSU, 2015
· Outstanding Teaching Assistant Award for Excellence in Mentorship, the Graduate School, NCSU, 2015

Memberships

· Member of ASA, ASA Astrostatistics Interest Group, Bernoulli Society, IMS, and ISBA
· Member of Mu Sigma Rho, National Statistical Honor Society, 2014

SERVICE

· Secretary of the ASA Astrostatistics Interest Group, January 1, 2020–December 31, 2021
· Member of the Organizing Committee for the 3rd Annual Postdoctoral Symposium at Yale University, October, 2019–June, 2020
· Member of the Local Organizing Committee, NESS NextGen: Data Science Day at Yale University, October, 2018
· Reviewer for *Journal of the Royal Statistical Society Series A, Journal of Multivariate Analysis, Astronomy and Computing, The Astronomical Journal, Journal of the Korean Statistical Society, Bayesian Analysis, Electronic Journal of Statistics, Monthly Notices of the Royal Astronomical Society, Yale Undergraduate Research Journal, Journal of the American Statistical Association*

INTERNSHIPS

· Data Scientist Intern, MaxPoint Interactive Inc. Morrisville, NC, May 16–August 16, 2016
· Product Analytics Summer Intern, MaxPoint Interactive Inc. Morrisville, NC, May 12–August 12, 2015

OBSERVING EXPERIENCE

· Two nights using EXPRES Spectrometer on the Discovery Channel Telescope at Lowell Observatory located in Arizona, June 7-8, 2019

LANGUAGES

· Fluent: Chinese (Cantonese, Gan, and Mandarin), English, R, and LaTeX
· Intermediate: Japanese, Python, SAS, and Taiwanese
· Beginner: French, Hakka, Julia, Matlab, Thai, and Spanish