BO NING

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Department of Statistics and Data Science
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APPOINTMENTS

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

EDUCATION

Ph.D., Statistics, North Carolina State University *2013–2018*
Advisors: Drs. Peter Bloomfield and Subhashis Ghoshal

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

RESEARCH INTERESTS

Astrostatistics, Bayesian methodology and theory on high-dimensional models; Bayesian nonparametrics; causal inference and missing data analysis; 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**, 2019. Empirical priors and coverage of posterior credible sets for a sparse normal mean model. *Sankhya A (the special issue dedicated to Jayanta K. Ghosh)*, 1–22.
- **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): 15pp.
- 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): 14pp.
- **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): 16pp.

Papers under review/in preparation

- **Bo Ning**, Bayesian principal component analysis with sparse priors. *Submitted.*

Software package

· 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

· (*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.*

· (*Presentation*) 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.*

· (*Presentation*) 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.*

· (*Presentation*) 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.*
· (*Presentation*) 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

· 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 (traditional)

· 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*

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

PROGRAMMING SKILLS

- Proficient: R, SAS, and LaTeX
- Familiar: Matlab, Python, and Julia

OBSERVING EXPERIENCE

- Two nights using EXPRES Spectrometer on the Discovery Channel Telescope at Lowell Observatory located in Arizona

LANGUAGES

- Native/fluent: Chinese (Cantonese, Gan, Mandarin) and English
- Intermediate: Japanese and Taiwanese
- Beginner: French, Hakka, Thai, and Spanish