

Jun Song

CONTACT INFORMATION

Department of Mathematics and Statistics
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EDUCATION

The Pennsylvania State University, University Park, PA.

Ph.D. in Statistics, August 2012 – August 2017.

- Adviser: Professor Bing Li.

Seoul National University, Seoul, Korea.

B.S. in Statistics, February 2011.

B.S. in Mathematical Sciences, February 2011.

ACADEMIC POSITIONS

The University of North Carolina at Charlotte, NC.

Assistant Professor, Department of Mathematics and Statistics, August 2017 – Present.

Affiliated Faculty, School of Data Science, August 2020 – Present.

RESEARCH INTERESTS

Sufficient Dimension Reduction, Functional Data Analysis, Machine Learning, Graphical Model.

PEER-REVIEWED PUBLICATIONS

*: Corresponding Author, †: UNC Charlotte Student

Published :

Jun Song* and Bing Li (in press) Nonlinear and additive principal component analysis for functional data. *Journal of Multivariate Analysis*.

Jun Song (2019) On sufficient dimension reduction for functional data: Inverse moment based methods. *Wiley Interdisciplinary Reviews: Computational Statistics*, **11**, e1459.

Holly Holt, Gabriel Villar, Weiyi Cheng, **Jun Song**, and Christina Grozinger (2018) Molecular, physiological and behavioral responses of honey bee (*Apis mellifera*) drones to infection with microsporidian parasites. *Journal of invertebrate pathology*, **155**, 14-24.

Bing Li and **Jun Song** (2017) Nonlinear sufficient dimension reduction for functional data. *The Annals of Statistics*, **45**, 1059–1095.

Submitted :

Paul H. Jung[†] and **Jun Song*** (2019+) Multivariate Neighborhood Trajectory Analysis: A Critique and Propose of Functional Data Analysis Approach. Submitted to *Geographical Analysis*. (Under major revision).

Bing Li and **Jun Song** (2018+) Dimension reduction for functional data based on weak conditional moments. Submitted to *The Annals of Statistics*, (Under major revision).

In Preparation :

Ali Mahzarnia[†] and **Jun Song***, Functional covariate selection for multivariate functional data.

Jun Song*, Kyongwon Kim, and Bing Li, Sparse Multivariate Functional PCA.

Bing Li and **Jun Song**, Sufficient dimension reduction for general tensors.

Jun Song and Won Chang, Calibration of High-dimensional Spatial Data via nonlinear sufficient dimension reduction.

Jun Song, Bing Li, and Hannu Oja, On functional Spearman's correlation and the related canonical correlation analysis.

Jun Song, Naomi S. Altman, and Kalyan Das, Self-modeling Nonlinear Poisson regression model.

TEACHING
EXPERIENCE

The University of North Carolina, Charlotte, NC.

- STAT 7133 / 8133, Multivariate Analysis (graduate course), Spring 2018, Spring 2019.
- STAT 6115 / DSBA 6115, Statistical Learning with Big Data (graduate course), Fall 2018, Fall 2019, Fall 2020.
- STAT 3122 / MATH 3122, Probability and Statistics I, Spring 2019.
- STAT 2122, Intro to Probability and Statistics, Spring 2020, Fall 2020.
- STAT 1222, Introduction to Statistics, Fall 2017, Summer 2018, Summer 2019.
- STAT 1221, Elements of Statistics I, Fall 2017, Fall 2018, Fall 2019, Spring 2020.

The Pennsylvania State University, University Park, PA.

- STAT 414 / MATH 414, Introduction to Probability Theory, Summer 2015, 2016.
- STAT 318 / MATH 318, Elementary Probability, Fall 2015, Spring 2016.

RESEARCH
SUPERVISION

The University of North Carolina, Charlotte, NC.

- Ali Mahzarnia (current Ph.D. student)
- Avery Johnson (current M.S. student)
- Ruari Swift-christian (B.S. in May 2020)
- Wei Zhang (M.S. in December 2018 | Current: Research Scientist, Standard Process Inc.)

HONORS AND
AWARDS

The University of North Carolina at Charlotte

- Faculty Research Grant Award, 2018–2019.

The Pennsylvania State University

- William Harkness Teaching Award, 2016.
- Jack and Eleanor Pettit Scholarship in Science, 2016.
- William Harkness Travel Award for JSM Seattle, 2015.
- August and Ruth Homeyer Graduate Fellowship, 2012–2013.
- University Graduate Fellowship, 2012–2013.

Seoul National University

- Brain Korea 21 Fellowship, Korea, 2011–2012.

Korea Science and Engineering Foundation

- National Science and Technology Scholarship, Korea, 2004–2010.

CONFERENCE TALKS

Invited Talks

- On sufficient dimension reduction for functional data, *Joint Statistical Meetings*, Virtual meeting, August 2020.
- On sufficient dimension reduction for functional data, *CMStatistics 2019*, London, UK, December 2019.
- Nonlinear dimension reduction for functional data, University of Nevada at Reno, October 2019.
- Nonlinear dimension reduction for functional data, George Mason University, October 2019.
- Nonlinear and additive principal component analysis for functional data, Korea University, Seoul, South Korea, July 2019.
- Nonlinear and additive principal component analysis for functional data, *EcoSta 2019*, Taichung, Taiwan, June 2019.
- Nonlinear and additive principal component analysis for functional data, *ICSA Applied Statistics Symposium*, Raleigh, North Carolina, June 2019.
- Nonlinear multivariate functional PCA, *Joint Statistical Meetings*, Vancouver, Canada, July 2018.
- Nonlinear multivariate functional PCA, *Conference of the Korean Statistical Society*, Busan, South Korea, May 2018.
- Nonlinear dimension reduction for functional data: supervised v.s. unsupervised, University of Kentucky, Lexington, Kentucky, March 2018.
- Dimension reduction for functional data, *ICSA Applied Statistics Symposium*, Chicago, Illinois, July 2017.
- Dimension reduction for functional data, Southern Methodist University, Dallas, Texas, February 2017
- Dimension reduction for functional data, University of North Carolina, Charlotte, North Carolina, February 2017
- Dimension reduction for functional data, Bowling Green State University, Bowling Green, Ohio, February 2017
- Dimension reduction for functional data, Miami University, Oxford, Ohio, January 2017
- Dimension reduction for functional data, University of Minnesota, Minneapolis, Minnesota, January 2017

Contributed Talks

- On sufficient dimension reduction for functional data, *The Joint Statistical Meetings*, Chicago, Illinois, July 2016.
- Nonlinear sufficient dimension reduction for functional data, *The Joint Statistical Meetings*, Seattle, Washington, August 2015.

PROFESSIONAL
MEMBERSHIP AND
SERVICES

- Member of the American Statistical Association.
- Member of the Institute of Mathematical Statistics.
- Member of the Korean International Statistical Society.
- Member of the Korean Statistical Society.
- External reviewer for *the Research Grants Council of Hong Kong*, 2018 – 2019.
- Reviewer for the following journals:
Biometrika, Journal of Multivariate Analysis, Statistica Sinica, Statistics and Computing, Statistics and Probability Letters, Annals of the Institute of Statistical Mathematics, Statistical Analysis and Data Mining, WIREs: Computational Statistics, and Journal of Business & Economic Statistics.
- Committee of Graduate Curriculum, Department of Math & Stat, UNC Charlotte, 2017 – Present.
- Committee of High School Math Contest Exam, Department of Math & Stat, UNC Charlotte, 2017 – Present.
- Ph.D. Dissertation Committee
July 2019 Chen Chen (Quantitative Associate at Lowes)
May 2019 Jialin Zhang (Assistant Professor at Mississippi State University)
- M.S. Comprehensive Exam Committee
April 2019 Liang Zhao
December 2018 Jim Fan
December 2018 Wei Zhang
May 2018 Kyle Hooks
April 2018 Zhiyuan Weng
April 2018 Xueji Wang
April 2018 Bo Qiu
April 2018 Yumiao Li
March 2018 Yicheng Li

OTHER SERVICES
AND EXPERIENCES

- Local Committee of National Math and Science Competition, KSEA, 2018–present.
- Proctor Ph.D. Qualifying Exam, UNC Charlotte, 2019.
- Peer advisor for new Ph.D. students in Statistics, The Pennsylvania State University, 2014.
- Graduate Student Consultant, Statistical Consulting Center, The Pennsylvania State University, Fall 2013, Spring 2014.
- Graduate Studies, Department of Statistics, Seoul National University, 2011 – 2012.
- Mentor for students in College of Liberal Studies, Seoul National University, 2010 – 2011.
- Research Assistant, The Bank of Korea, Seoul, Korea, Oct. 2008–Nov. 2008.
- Research Assistant, The Boston Consulting Group, Seoul, Korea, Aug. 2008–Sep. 2008.
- Military Service, Sergeant, Republic of Korea Army, Feb. 2005 – Feb. 2007.