

Hyebin Song

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SUMMARY

My broad research interests are large-scale statistical inference problems, which often involve both statistical and computational challenges. My focus is on developing practical methods while providing theoretical insights. Methodologically, my interest includes studying parametric and semi-parametric methods in a non-classical setting when the number of features can exceed the number of available samples. I am also interested in semi-supervised learning problems where only partially labeled samples are available, and in estimation with contaminated data.

EDUCATION

University of Wisconsin-Madison

Doctor of Philosophy; GPA: 3.85/4.00

Madison, WI

Expected May 2020

Yonsei University

Bachelor of Art in Applied Statistics; GPA: 3.98/4.00

Seoul, Korea

March 2007 - Dec 2011

EMPLOYMENT HISTORY

University of Wisconsin-Madison, Department of Statistics

Research Assistant

Madison, WI

Aug 2014 - Present

Bank of Korea

Statistician / National Account Expenditure Team

Seoul, Korea

Jan 2012 - Aug 2014

PUBLICATION

- **Hyebin Song**, Garvesh Raskutti. PULasso: High-dimensional variable selection with presence-only data. *Journal of the American Statistical Association*, 2018.
- Ran Dai, **Hyebin Song**, Rina Foygel Barber, Garvesh Raskutti, The bias of isotonic regression. *Submitted to Electronic Journal of Statistics*, 2019.
- Yuan Li, Benjamin Mark, Garvesh Raskutti, Rebecca Willett, **Hyebin Song**, David Neiman, Graph-based regularization for regression problems with alignment and highly-correlated designs. *Submitted to SIAM Journal on Mathematics of Data Science*, 2019.
- **Hyebin Song**, Garvesh Raskutti. Convex and Non-convex Approaches for Statistical Inference with Noisy Labels. *Submitted to Journal of Machine Learning Research*, 2019.
- **Hyebin Song**, Ben Bremer, Emily Hinds, Garvesh Raskutti, and Philip Romero. Inferring protein sequence-function relationships with large-scale positive-unlabeled learning. *in progress*, 2019.

HONORS AND AWARDS

- **ASA SLDS Student Paper Competition Winner**, ASA Statistical Learning and Data Science, Jan 2018
- **Gateway course Teaching Assistant Award**, Department of Statistics, UW-Madison, May 2017
- **Highest Honor Awards**, Yonsei University, 2008, 2010, 2011
- **Merit-based Scholarships**, Yonsei University, 2007, 2008, 2010
- **GE scholarship**, Fulbright, 2007

TEACHING

- **Teaching Assistant:**
 - Introductory Applied Statistics for the Life Sciences (2014 Fall)
 - Introduction to Statistical Methods (2015 Spring, 2015 Fall, 2017 Spring)
 - Introductory Applied Statistics for Engineers (2016 Spring)
 - Statistical Experimental Design (2016 Fall)
 - Introduction to Theory and Methods of Mathematical Statistics II (2016 Fall)
 - Theory and Application of Regression and Analysis of Variance II (2018 Spring)

SKILLS

- Programs for data analysis or software development
- Proficient in R and C++
 - Developed a package "PULasso" based on C++ and R, which is publicly available on CRAN.
- Experienced in Matlab, Python, and SAS

TALK

- PULasso: High-dimensional variable selection with presence-only data.
 - at SILO Seminar, UW-Madison, Jan 2018
 - at Joint Statistical Meeting (JSM), Vancouver, Jul 2018
- High-dimensional Variable Selection in Positive-Unlabeled Learning
 - at 2019 Workshop on Recent Developments on Mathematical/Statistical approaches in DATA Science (MSDAS), UT Dallas, June 2019

SERVICE

- Reviewer, Journal of Machine Learning Research, Jan 2019
- Judge for 2019 UW Undergraduate Data Challenge, Oct 2019