

Beomjo Park

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RESEARCH INTERESTS

I am broadly interested in robust statistical inference which could better accommodate the model misspecification and data corruptions. My research lies in associated statistical learning theory and various interdisciplinary applications.

EDUCATION

- AUG 2018 – **Carnegie Mellon University**, Pittsburgh, PA
MAY 2023 Ph.D. in STATISTICS & DATA SCIENCE
Advisors: Sivaraman Balakrishnan & Larry Wasserman
- SEP 2016 – **Korea University**, Seoul, Korea
AUG 2018 M.S. in STATISTICS
Thesis: Bayesian Hierarchical Time-Varying Mixed Effect Model | Advisor: Taeryon Choi
- MAR 2010 – **Korea University**, Seoul, Korea
AUG 2016 B.Sc. in INDUSTRIAL MANAGEMENT ENGINEERING & B.Ec. in STATISTICS (Double Major)

RESEARCH EXPERIENCES

- MAY 2022 – **Data Scientist Intern, Google LLC**, Mountain View, CA
AUG 2022
 - Quantified the causal effect of Ad quality to the user engagement by analyzing YouTube session data.
 - Selected as an outstanding intern presentation in YouTube Ads QUADS team.
- JUL 2020 – **Graduate Researcher, Carnegie Mellon University**
PRESENT Developed robust inference methods for constructing batch and sequential confidence sets accounting for model misspecification and data corruption [6].
- JAN 2019 – **Advanced Data Analysis, Carnegie Mellon University**
JUL 2021
 - Constructed spatio-temporal heat transport field of global oceans from large-scale autonomous profiling float observations that are partially missing, heterogeneous, and sparsely distributed [1].
 - Provided insight into climatological phenomena (El Niño) by collaborating with oceanographers.
- SEP 2016 – **Graduate Researcher, Korea University**
JUL 2019
 - Researched hierarchical Bayesian model representations and nonparametric mixture processes.
 - Tailored methods to a meta-analysis in medical studies [2] and functional data analysis.
 - Implemented and assessed model selection criteria for scalable Variational inference [3][5].
 - Enhanced and reviewed the end-user application and built discipline-specific worked examples [4].
- JUL 2016 – **Research Assistant, NCSoft (NLP lab), Korea**
DEC 2016 Extracted key features and importance affecting individual players' seasonal performance by analyzing Korea Baseball Championship historical data with a hierarchical Bayesian latent model.

HONORS AND AWARDS

- MAY 2022 2021-2022 PhD TA of the year by Dept. of Statistics, Carnegie Mellon University.
NOV 2017 SG graduate student paper presentation award (3rd place) by the Korean Statistical Society.
FALL 2015 National Science Scholarship by Korea Student Aid Foundation.
MAR 2011 –
AUG 2016 High Honors (with scholarship) by Korea University.

PUBLICATIONS

- [1] **Park, B.**, Kuusela, M., Giglio, D. & Gray, A. (2022) Spatio-Temporal Local Interpolation of Global Ocean Heat Transport using Argo Floats: A Debiased Latent Gaussian Process Approach. To appear at *Annals of Applied Statistics*
- [2] Jo, S., **Park, B.**, Chung, Y., Kim, J., Lee, E. & Choi, T. (2021) Bayesian semiparametric mixed effects models for meta-analysis of literature data : An application to cadmium toxicity studies. *Statistics In Medicine*.
- [3] Lim, D., **Park, B.**, Nott, D. J., Choi, T., & Xueue, W. (2020) Sparse signal shrinkage and outlier detection in high-dimensional quantile regression with variational Bayes. *Statistics and Its Interface*.
- [4] Jo, S., Choi, T., **Park, B.**, & Lenk, P.J. (2019) bsamGP: An R Package for Bayesian Spectral Analysis Models using Gaussian Process Priors. *Journal of Statistical Software*.
- [5] Ong, V. M., Mensah, K. M., Nott, D. J., Jo, S., **Park, B.**, & Choi, T. (2017) A variational Bayes approach to a semiparametric regression using Gaussian process priors. *Electric Journal of Statistics*.

PREPRINTS

- [6] **Park, B.**, Balakrishnan, S. & Wasserman, L. (2021) Robust Universal Inference under Model Misspecification.

CONFERENCE PRESENTATIONS

Park, B., & Kuusela, M. (Aug., 2020) Spatio-Temporal Local Interpolation for Quantifying Global Ocean Heat Transport from Autonomous Observations. (Contributed Talk) *Joint Statistical Meetings*.

Park, B., & Choi, T. (Jul., 2018) Bayesian Hierarchical Varying-coefficient Mixed Model. (Poster session) *The third East Asia Chapter of ISBA Conference*, Seoul, Korea.

Park, B., & Choi, T. (Nov., 2017) Bayesian Multivariate Hierarchical Semiparametric Mixed Model with Gaussian Process Priors. *The Korean Statistical Society Autumn Conference*, Seoul, Korea.

► 3rd place on SG graduate student paper presentation award.

TEACHING EXPERIENCES

	Teaching Assistant, Carnegie Mellon University
AUG 2018 –	Carnegie Mellon Sports Analytics Camp - Undergrad Research Experience program,
MAY 2022	Introduction to Statistical Inference (head TA), Advanced Methods for Data Analysis (head TA), Probability and Mathematical Statistics, Statistical Graphics and Visualization, Statistical Computing.
	Teaching Assistant, Korea University
SEP 2016 –	Mathematical Statistics, Research Methods II, Statistical Computing Methods,
AUG 2017	Elementary Computational Statistics.

LANGUAGES

Languages: English (Proficient), Korean (Native)
Programming: R[†], Python, MATLAB, C++
† Current maintainer of bsamGP package on [CRAN](#).