

# 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.S. in INDUSTRIAL MANAGEMENT ENGINEERING & B.Ec. in STATISTICS (Double Major)

## RESEARCH EXPERIENCES

- 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 [5].
- 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 [6].
  - 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 [1] and functional data analysis.
  - Implemented and assessed model selection criteria for scalable Variational inference [2][4].
  - Enhanced and reviewed the end-user application and built discipline-specific worked examples [3].
- 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.

## PUBLICATIONS

- [1] 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*.
- [2] 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*.
- [3] 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*.
- [4] 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

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- [5] **Park, B.**, Balakrishnan, S. & Wasserman, L. (2021) Robust Projection Inference under Model Misspecification.
- [6] **Park, B.**, Kuusela, M., Giglio, D. & Gray, A. (2021) Spatio-Temporal Local Interpolation of Global Ocean Heat Transport using Argo Floats: A Debiased Latent Gaussian Process Approach.  
In revision at *Annals of Applied Statistics*

## CONFERENCE PRESENTATIONS

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

► 3<sup>rd</sup> place on SG graduate student paper presentation award.

## HONORS AND AWARDS

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NOV 2017	SG graduate student paper presentation award (3 <sup>rd</sup> place) by the Korean Statistical Society.
FALL 2015	National Science Scholarship by Korea Student Aid Foundation.
SPRING 2011 – SPRING 2016	High Honors (with scholarship) by Korea University.

## TEACHING EXPERIENCES

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	<b>Teaching Assistant, Carnegie Mellon University</b>
SUMMER 20, 21	Carnegie Mellon Sports Analytics Camp - Undergrad Research Experience program
SPRING 20, 21	Advanced Methods for Data Analysis
FALL 19, 20	Probability and Mathematical Statistics
SUMMER 2019	Statistical Graphics and Visualization
SPRING 2019	Probability and Mathematical Statistics
FALL 2018	Statistical Computing
	<b>Teaching Assistant, Korea University</b>
FALL 2017	Mathematical Statistics, Research Methods II
SPRING 2017	Statistical Computing Methods
FALL 2016	Elementary Computational Statistics

## LANGUAGES

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Languages:	English (Proficient), Korean (Native)
Programming:	R <sup>†</sup> , Python, MATLAB, C++ † Current maintainer of <code>bsamGP</code> package on <a href="#">CRAN</a> .