Beomjo Park

beomjo@stat.cmu.edu | beomjop | beomjopark | Website | Pittsburgh, PA

Research Interests

Robust Statistical Inference, Model Misspecification, Nonparametrics, Gaussian Process

Education

Aug 2018 – Current
Carnegie Mellon University, Pittsburgh, PA
Ph.D. candidate in Statistics & Data Science
Advisor: Sivaraman Balakrishnan & Larry Wasserman

Sep 2016 – Aug 2018
Korea University, Seoul, Korea
M.S. in Statistics
Modeling focused on hierarchical representation and the nonparametric mixture approach tailored to medical studies and longitudinal data analysis. Scalable Variational Inference, and end-user application under the Bayesian semiparametric regression framework.
Thesis: Bayesian Hierarchical Time-Varying Mixed Effect Model | Advisor: Taeryon Choi

Mar 2010 – Aug 2016
Korea University, Seoul, Korea
B.Sc. in Industrial Management Engineering & B.Ec. in Statistics *(Double Major)*

Research Experiences

Jul 2016 – Dec 2016
Research Assistant at NCSoft, Korea
Analyze Korea Baseball Championship (KBO League) historical data to assess individual players' performance and to extract factors impacting the performance with hierarchical Bayesian latent model

Jan 2019 – July 2020
Advanced Data Analysis at Carnegie Mellon University
Construct spatio-temporal field of Oceanic Heat Transport from sparse Argo arrays with latent local Gaussian process model advised by Mikael Kuusela (Stat., CMU), Donata Giglio (ATOC, Univ. of Colorado Boulder) and Alison Gray (Ocean., Univ. of Washington)

July 2020 – Current
Universal inference on the projection to construct confidence set robust under model misspecification. advised by Sivaraman Balakrishnan and Larry Wasserman (Stat., CMU)

Publications

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*, https://doi.org/10.1002/sim.8996.

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*, 13(2), 237–249. https://dx.doi.org/10.4310/SII.2020.v13.n2.a8

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*, 90(10), 1–41. https://doi.org/10.18637/jss.v090.i10

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*, 11(2), 4258–4296. https://doi.org/10.1214/17-EJS1324

Preprints

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. *arXiv*

Conference Presentations

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. (Nov., 2017) Bayesian Multivariate Hierarchical Semiparametric Mixed Model with Gaussian Process Priors. *The Korean Statistical Society Autumn Conference*, Seoul, Korea.
† 3rd prize on SG graduate student paper presentation award

Teaching Experiences

Teaching Assistant

Summer 20, 21	Carnegie Mellon Sports Analytics Camp - Undergrad Research Experience program	
Spring 20, 21	Advanced Methods for Data Analysis	Instructor: Ann Lee, Ph.D.
Fall 19, 20	Probability and Mathematical Statistics	Instructor: Valerie Ventura, Ph.D.
Summer 2019	Statistical Graphics and Visualization	Instructor: Robin Dunn
Spring 2019	Probability and Mathematical Statistics	Instructor: Jing Lei, Ph.D.
Fall 2018	Statistical Computing *Carnegie Mellon University*	Instructor: Ryan Tibshirani, Ph.D.
Fall 2017	Mathematical Statistics, Research Methods II	Instructor: Taeryon Choi, Ph.D.
Spring 2017	Statistical Computing Methods	Instructor: Taeryon Choi, Ph.D.
Fall 2016	Elementary Computational Statistics *Korea University*	Instructor: Seonghwan Kim, Ph.D.

Honors and Awards

Fall 2015	National Science Scholarship
Fall 2014 – Spring 2016	High Honors
Spring 2012	Highest Honors
Spring 2011 – Spring 2012	High Honors

Languages

Languages:	English (Proficient), Korean (Native)
Programming:	R†, Python, MATLAB, C++, Fortran, LaTeX

† Current maintainer of `bsamGP` R package on CRAN