Beomjo Park, PhD

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PROFESSIONAL SUMMARY

Research-focused Data Scientist developing and implementing quantitative methodologies, from experiment and measurement design to statistical (causal) inference, for optimization and analysis of large-scale data in diverse applications.

EXPERIENCES

Data Scientist, Research, Google, Mountain View, CA   Aug 2023 – Present
- Developed measurement and optimization frameworks for YouTube Ads creative generation and enhancement, achieving a balance between revenue uplift and serving resource costs.
- Design end-to-end diagnostic methods to identify and pinpoint systematic inefficiency at the most granular level within the YouTube Ads serving funnel.

Data Scientist Intern, Google, Mountain View, CA   May 2022 – Aug 2022
- Quantified the causal mediation effect of Ad quality on user engagement by analyzing YouTube session data.
- Designed an improved counter metric accounting for the causal structure of user engagement.
- Selected as an outstanding intern presentation in YouTube Ads QUADS team.

Graduate Researcher, Carnegie Mellon University, Pittsburgh, PA   Jan 2019 – Aug 2023
- Developed universal inference methods for constructing batch and sequential confidence sets accounting for model misspecification, lack of regularity, and data contamination [6][7].
- 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].
- Delivered a scientific insight into climatological phenomena by collaborating with domain scientists.

Graduate Researcher, Korea University, Seoul, Korea   Sep 2016 – Jul 2019
- Researched hierarchical Bayesian model representations and nonparametric mixture processes.
- Tailored above 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].

Research Assistant, NCSoft (NLP lab), Korea   Jul 2016 – 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

Student paper award by Statistical Learning and Data Science Section, *American Statistical Association*.	Aug 2023
Outstanding intern presentation by YouTube Ads QUADS team, *Google*.	Aug 2022
PhD TA of the year (2021-2022) by Dept. of Statistics, *Carnegie Mellon University*.	May 2022
SG graduate student paper presentation award (3rd place) by the *Korean Statistical Society*.	Nov 2017
National Science Scholarship by *Korea Student Aid Foundation*.	Fall 2015
High Honors (with scholarship) by *Korea University*.	Mar 2011 – Aug 2016

EDUCATION

Ph.D. in Statistics & Data Science, *Carnegie Mellon University*, Pittsburgh, PA	Aug 2018 – Aug 2023
M.Sc. in Statistics, *Korea University*, Seoul, Korea	Sep 2016 – Aug 2018
B.Sc. in Industrial Engineering & B.Ec. in Statistics, *Korea University*, Seoul, Korea	Mar 2010 – Aug 2016

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. *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. (2025) Robust Universal Inference For Misspecified Models.
▶ Winner of ASA Statistical Learning and Data Science Student Paper Award.

[7] **Park, B.**, Balakrishnan, S. & Wasserman, L. (2023) Nonparametric Functional Estimation under Contamination.

CONFERENCE PRESENTATIONS

Park, B., Balakrishnan, S. & Wasserman, L. (Aug. 2023) Robust Universal Inference. *JSM*, Toronto, Canada.

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

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

Aug 2018 – July 2023	**Teaching Assistant, Carnegie Mellon University** Carnegie Mellon Undergrad Research Experience program (Sports Analytics & Optum Camp), Introduction to Statistical Inference (head TA), Advanced Methods for Data Analysis (head TA), Probability and Mathematical Statistics (head TA), Statistical Graphics and Visualization, Statistical Computing.
Sep 2016 – Aug 2017	**Teaching Assistant, Korea University** Mathematical Statistics, Research Methods II, Statistical Computing Methods, Elementary Computational Statistics.

LANGUAGES

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