Sang Kyu Lee

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Education

Michigan State University — East Lansing, USA
Ph.D. in Statistics — Sep. 2019 - Present

Konkuk University — Seoul, Republic of Korea
B.A. & M.S. in Statistics — Aug. 2016 & Feb. 2019

Experiences

Predoctoral Fellow
National Cancer Institute, National Institute of Health — Rockville, USA
Predoctoral fellow advised by Dr. Hyokyoung G. Hong — Sep. 2022 - Present

- Participating in various multiple health-related research projects.

Graduate Student Representative
Michigan State University — East Lansing, USA
Elected Ph.D. student Representative — Aug. 2021 - Aug. 2022

- Participated as a member of several committees with professors; Major Curriculum Committee, Inviting Talk Committee and the Committee of Whole.

Graduate Research Assistant
Michigan State University — East Lansing, USA
Graduate research assistant in Institute for Health Policy — Oct. 2020 - Aug. 2022

- Participated several projects related to the topics such as the evaluations of policies about opioids and medicaid, and COVID-19 data analyses. I mainly worked with local hospitals and the state government(MDHHS).

Graduate Teaching Assistant
Michigan State University — East Lansing, USA
Graduate teaching assistant — Sep. 2019 - Dec. 2020

- Lab instructor for STT 200 class / A grader for various undergraduate classes

Research Papers

Mattia, A., Thompson, A., **Lee, S. K.**, Hong, H. G., Green, W. H., and Cognett, A. B. "Superficial X-Ray in the Treatment of Basal and Squamous Cell Carcinoma: A 22-Year Retrospective Analysis", *revision invited*

Kim, Y., Jang, Y., Chang, J. H., **Lee, S. K.**, Zhao, J. and Kim, H. M. "MLEce: Statistical Inference for Asymptotically Efficient Closed-Form Estimators", *under review*

Chang, J., **Lee, S. K.** and Kim, H. M. (2023) "New efficient estimator for Dirichlet distribution", *Stat*, 12, 1, e640, https://doi.org/10.1002/sta4.640

Lee, E. R., Park, S., **Lee, S. K.** and Hong, H. G. (2023) "Quantile forward regression for high dimensional survival data", *Lifetime Data Analysis*, 29, 769-806, https://doi.org/10.1007/s10985-023-09603-w

Lee, S. K. and Kim, H. M. (2022) "Two tests using more assumptions but lower power", *Communications for Statistical Applications and Methods*, 30, 1, 109-117, https://doi.org/10.29220/CSAM.2023.30.1.109

Yang, K., **Lee, S. K.**, Zhao, J. and Kim, H. M. (2021) "EMSS: New EM-type algorithms for the Heckman selection model in R", *The R journal*, 13, 2, 306-320, https://doi.org/10.32614/RJ-2021-098

Lee, S. K., Chang, J. and Kim, H. M. (2021) "Further sharpening of Jensen's inequality", *Statistics*, 55, 5, 1154-1168, https://doi.org/10.1080/02331888.2021.1998052

Zhao, J., **Lee, S. K.** and Kim, H. M. (2019) "Some counterexamples of a skew-normal distribution", *Communications for Statistical Applications and Methods*, 26, 6, 583-589, https://doi.org/10.29220/CSAM.2019.26.6.583

Computer language proficiency

Proficient level : R, LaTeX, Markdown, Python, C/C++(Rcpp)
Intermediate level : SPSS, SAS
Experience level : STATA, SQL

Softwares

DiSSMod
R package on CRAN; Maintainer and author Shiny example link / CRAN link
Tools to fit sample selection models in case of discrete response variables, through a parametric formulation which represents a natural extension of the well-known Heckman selection model

EMSS
R package on CRAN; Maintainer and author CRAN link
Some EM-type algorithms to estimate parameters for the well-known Heckman selection model

MLEce
R package on CRAN; Author CRAN link

Estimate asymptotic efficient closed-form estimators and provide goodness of fit, estimates, plot and etc for various distributions

vcPB

R package on Github; Maintainer and author Github link

A package for for estimating the disparity between a majority group and minority group based on the extended model of the Peters-Belson method to the longitudinal framework

Research talks

Intermediate R programming - apply and Rcpp functions, Konkuk University

FDR control via regional quantile regression on ultra-high dimension, University of Florida

FDR control via regional quantile regression on ultra-high dimension, MSU

FDR control via regional quantile regression on ultra-high dimension, JSM

References

Hyokyoung Grace Hong, *Adjunct Associate Professor & Senior Investigator*
Department of Statistics and Probability, Michigan State University
Division of Cancer Epidemiology and Genetics, National Cancer Institute, National Institute of Health

- Email: grace.hong@nih.gov
- Homepage: https://dceg.cancer.gov/about/staff-directory/hong-grace

Haolei Weng, *Assistant Professor*
Department of Statistics and Probability, Michigan State University

- Email: wenghaol@msu.edu
- Homepage: https://haoleiweng.github.io/

Hyoung-Moon Kim, *Professor*
Department of Applied Statistics, Konkuk University

- Email: hmk966a@gmail.com
- Homepage: http://home.konkuk.ac.kr/~hmkim/