Byungho Lee

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Academic Experience

Michigan State University, MI, US

Ph.D. in Computer Science and Engineering (CSE) **Aug. 2022 – 2025**
Ph.D. in Ecology, Evolution, and Behavior (EEB) program

- Advisor: Dr. Kevin J. Liu
- Research Area: Statistical Inference & Learning in Phylogenetics & Phylogenomics
- Teaching Assistant: Data Structure, Algorithms, Big Data Analysis, Machine Learning, AI

Stony Brook University, NY, US

M.S in Applied Mathematics and Statistics Sep. 2020 – May 2022

- Established solid backgrounds on Statistics / Biostatistics
- Interdisciplinary Studies on: Machine Learning / Computer Vision

Stony Brook University, NY, US

B.S. in Applied Mathematics and Statistics Jan. 2019 – Dec. 2020

- Advisor: Dr. Hongshik Ahn
- Research Area: Statistical Analysis on multiple regression models

Stony Brook University, NY, US

B.S. in Technological Systems Management Mar. 2014 – Jan. 2019

- Teaching Assistant: Applied Calculus, Computer Science Principles (Python)

Research Experience

Liu Lab, MSU

Research Assistant under Dr. Kevin Liu **Aug. 2022 – 2025**

- Focus on developing new algorithm in biomolecular (genomic) sequence analysis
- Study statistical improvement on the phylogenetic support estimation

Biostatistics Research Lab, SUNY Korea

Research Assistant under Dr. Koh Jan. 2022 – Aug. 2022

- Understand and analyze Ecologically and Taxonomically on human microbiome data
- Manage and apply Survival Analysis in the team

Dpt. of Applied Mathematics and Statistics, SUNY Korea June 2021 – Aug. 2021

Graduate Research Assistant under Dr. Cao

- Assist and study Mathematics in Machine Learning

Dpt. of Applied Mathematics and Statistics, Stony Brook University

Undergraduate Research Student under Dr. Hongshik Ahn Jan. 2020 – May 2020

- Studied, applied, and evaluated multiplied Theoretical Statistics
- Analyzed and predicted effects on Heart Failure with multiple regression models on the Kansas City Cardiomyopathy Questionnaire data

Journal and Conference Publications

1. **B. Lee** and K. J. Liu, "A Statistical Optimization Technique to Inform Statistical Resampling Assessments of Phylogenetic Reconstruction Reliability," 2024 IEEE International Conference on Bioinformatics and Biomedicine (BIBM), Lisbon, Portugal, 2024, pp. 6701-6709, doi: 10.1109/BIBM62325.2024.10822795.

2. Kolba, N., **Lee, B.**, Tannous, H., Bilfinger, T., & Shroyer, A. (2023). Preoperative mental illness and postoperative atrial fibrillation in cardiac surgery patients: Identifying a vulnerable population. *Journal of Clinical and Translational Science, 7*(1), E15. doi:10.1017/cts.2022.493

3. Gu, W.; Koh, H.; Jang, H.; **Lee, B.**; Kang, B. MiSurv: An Integrative Web Cloud Platform for User-Friendly Microbiome Data Analysis with Survival Responses. *Microbiol. Spectr.* **2023**, *10*, e05059-22.

Accepted Manuscripts / Preprints

Reviewed Journals/Conferences

ACM BCB 2023
ISBRA 2023
IEEE BIBM 2024

Fellowships/Scholarships

EEB 2022 Graduate Recruitment Fellowship
EEB 2023 Graduate Summer Fellowship

Work Experience

Biostatistics Lab, SUNY Korea Jan. 2022 – Aug. 2022
Research Intern
- Develop an Integrative Web Cloud Platform for Microbiome Data Analysis with Survival Responses

Cancer Center, Stony Brook Medicine Feb. 2022 – May 2022
Senior Research Aide
- Statistical analysis on Prostate Cancer Data from SPARCS (NY Gov)

Artillery, Republic of Korea
Sergeant, Fire Direction Center (FDC) Apr. 2017 – Jan. 2019
- Served as Vertical-Horizontal Control Operator (VCO & HCO), Computer (COM)
- Various statistical operations and calculations manually and automatically
- Various statistical analyses on data from cumulative gunnery exercise results
- Educating successors on theoretical backgrounds, formulas, and tactical skills

Projects

Dpt. of Computer Science and Engineering, Michigan State University

Aug. 2023 – Dec. 2023

- Statistical Large Language Model on evaluating AI-generated texts

Dpt. of Applied Mathematics and Statistics, Stony Brook University

Aug. 2021 – Dec. 2021

- Machine Learning Project on Transfer Learning from Computer Vision

Jan. 2020 – May 2020

- Regression Analysis Project on predicting environmental and genetic effects based on paper by Caspi et al.

Sep. 2020 – Dec. 2020

- Regression Analysis Project using R
- Failure & Survival Data Analysis Projects on leukemia data using R

Jan. 2021 – May 2021

- Categorical Data Analysis Project on Titanic Data
- R package project based on the paper by Professor Pei Fen Kuan

Software/Analytic Skills

Python, R, Java, SAS,
Statistical / Phylogenomic / Comparative Genetic Analysis

Certificate

Advanced Graduate Certificate in Data & Computational Science, Stony Brook University
AWS Academy Cloud Foundations, AWS Academy Graduate