Bumjun Park

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Profile

Doctoral student in Biostatistics. Undergraduate statistics major with certificates in mathematics and economic analytics. Interests in spatial and environmental statistics. Proficient in R and Python. Native speaker of Korean and English. Intermediate level of Spanish and French.

Education

September 2023 – August 2028(expected)
Seattle, WA

University of Washington, *Ph. D. in Biostatistics*

September 2018 – May 2023
Madison, WI

University of Wisconsin-Madison,
BS in Statistics, Cert. in Mathematics and Economic Analytics
(Cumulative GPA: 4.0/4.0)

March 2015 – February 2018
Yongin, South Korea

Hankuk Academy of Foreign Studies, *High School Diploma*
(Cumulative GPA: 4.0/4.0)

Professional Experience

September 2022 – May 2023
Madison, WI

Data Analyst, *Professor Jonathan Patz Lab, Nelson Institute for Environmental Studies, UW-Madison*

- Assisted researchers and graduate students at the Patz lab in preprocessing and processing data from projects in areas ranging from environmental policy, air quality, or epidemiology.
- Reformatted code and fitted statistical models such as spatial random forests to investigate the relationship between incidences of malaria prevalence in Kenya and vegetation coverage, insecticide-treated net distribution, precipitation, and livestock population.

May 2022 – May 2023
Madison, WI

Research Assistant,
Professor Chris Zahasky, Department of Geoscience, UW-Madison

- Implemented web-scraping algorithms to collect data of per- and polyfluoroalkyl substances (PFAS) concentration levels provided by the U.S. Air Force, Wisconsin Department of Natural Resources, and other state-level environmental agencies.
- Provided data visualizations of the geo-statistical data. Built prediction models, such as logistic regression or random forest models to predict PFAS concentration levels. Communicated with and presented the results to the advisor.

February 2022 – May 2023
Madison, WI

Research Assistant, *Professor Stephen Gammie, Department of Integrative Biology, UW-Madison*

- Collaborated with three other assistants to clean, preprocess, and analyze, RNA-sequencing gene expression data of mice with Alzheimer's disease, collected from multiple platforms to identify differentially expressed genes.
- Collected gene expressions data of Parkinson's disease and Alzheimer's disease patients, wrote and implemented programming methods to process the data, and fitted a machine learning classification model by identifying top-scoring differential gene pairs.
- Discovered that reducing the number of genes and splitting the data into finer sets increased the predictive accuracy of neurological disorders, and explored clustering methods such as K-means clustering to subset patients into separate groups.

September 2019 – July 2021
Osan, South Korea

Aviation Control, Squadron Leader, 2nd Squadron, 31st Air Defense and Control, *Republic of Korea Air Force*

- Served as the squadron leader, leading and representing the 20 servicemen of the 2nd Control Squadron, regularly communicating with officers.
- Interpreted RADAR and GPS data and communicated with flight agencies to identify aircraft. Regularly presented and explained aviation data to other military officials and civilian pilots.

Publications and Presentations

March 16th, 2023

B. Park, H. Kang, W. Gnesda, and C. Zahasky. Groundwater Contamination of Per- and Polyfluoroalkyl Substances in the United States - Insights from an Ecological Sampling Bias Correction Method,
American Water Resources Association - Wisconsin Section, Reconnecting with Wisconsin's Water and Water Scientists
Poster presentation of research project displaying a PFAS contamination risk map, applying bias correction methods of observer biases in echological sampling.

November 7th, 2022

B. Park, W. Gnesda, and C. Zahasky. Groundwater Contamination of Per- and Polyfluoroalkyl Substances in the United States — Insights from a Random Forest Model,
Water@UW-Madison Fall Art & Poster Session
Poster presentation of research project displaying a national risk map of PFAS contamination.

November 2nd, 2022

T. Leffler, R. Hoffman, B. Park, J. Patz. Malaria Risk and Forest Cover Change in Kenya: A Geospatial Analysis,
Planetary Health Alliance Annual Meeting 2022
Poster presentation inspecting the relationship between vegetation and Malaria in Kenya for which statistical analyses and visualizations were provided.

Awards

April 28th, 2022 — **UW-Madison Undergraduate Scholarship for Summer Study**

June 27th, 2018 — **Wisconsin Alumni Association Korea Chapter (WAAK) Scholarship**

Dean's List
2018 Fall, 2019 Spring, 2021 Fall, 2022 Spring, 2022 Fall, 2023 Spring

Skills

R Programming ●●●●○
Data visualization (ggplot2, plotly), processing (dplyr), Bioconductor packages(limma, GEOquery), R Markdown documenting, etc.

Python Programming ●●●●○
Data processing (pandas), visualization (seaborn), Uniform Manifold Approximation and Projection etc.

QGIS ●●●○○
Processing raster or vector data for geostatistical analyses such as Triangulated Irregular Network, and formatting the data for use in R or Python

SQL ●●○○○
Querying and joining relational databases

Certificates

Certified Associate in Python Programming
Python Institute