# Bumjun Park *Ph.D. Student*

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## 🪪 PROFILE

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

## 🎓 EDUCATION

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| 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* (GPA: 4.0/4.0) |
| March 2015 – February 2018 Yongin, South Korea | **Hankuk Academy of Foreign Studies** *High School Diploma* (GPA: 4.0/4.0) |

## 🗄 PROFESSIONAL EXPERIENCE

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| September 2023 – present Seattle, WA | **Research Assistant** *Professor Eardi Lila, Department of Biostatistics, University of Washington* <br> - Worked on a team led by Professor Mahmud Mossa-Basha, Department of Radiology, UW-Medicine and studied novel statistical methods such as multivariate functional data analysis methods for predicting ischemic stroke. <br> - Investigated and developed quantitative models for reclassifying Embolic Strokes of Undetermined Source (ESUS) using cerebral vessel wall MRI data. |
| September 2022 – May 2023 Madison, WI | **Data Analyst** *Professor Jonathan Patz Lab, Nelson Institute for Environmental Studies, UW-Madison* 🔗 <br> - 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. <br> - 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. |

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| May 2022 – May 2023<br>Madison, WI | **Research Assistant**<br>*Professor Chris Zahasky, Department of Geoscience, UW-Madison* 🔗<br>- 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.<br>- Provided data visualizations of the geo-statistical data and built an Inhomogeneous Poisson Process model to predict PFAS concentration levels after adjusting for opportunistically sampled data. |
| February 2022 –<br>May 2023<br>Madison, WI | **Research Assistant**<br>*Professor Stephen Gammie, Department of Integrative Biology, UW-Madison*<br>- 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.<br>- 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. |
| September 2019 –<br>July 2021<br>Osan, South Korea | **Aviation Control, Squadron Leader**<br>*2nd Squadron, 31st Air Defense and Control, Republic of Korea Air Force*<br>- Served as the squadron leader, leading and representing 20 servicemen of the 2nd Control Squadron.<br>- 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

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| 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**<br>*American Water Resources Association - Wisconsin Section, Reconnecting with Wisconsin's Water and Water Scientists*<br>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**<br>*Water@UW-Madison Fall Art & Poster Session*<br>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.*

**GIS** ● ● ● ● ○
*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*

## 📚 COURSES

**STAT512: Statistical Inference**
Fall 2023 / Instructor: Ema Perkovic

**STAT513: Statistical Inference**
Spring 2024 / Instructor: Zaid Harchaoui

**BIOST514: Biostatistics I**
Fall 2023 / Instructor: Ken Rice

**BIOST515: Biostatistics II**
Spring 2024 / Instructor: Amy Willis

**BIOST555: Statistical Methods for Spatial Epidemiology**
Spring 2024 / Instructor: Jon Wakefield