Yeji Kim

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https://yejiginakim.github.io/

EDUCATION

Stony Brook University Stony Brook, New York
M.S. in Applied Mathematics and Statistics (Statistics Track) | GPA: 3.55 *December 2024*
Relevant Courses: Data Analysis | Introduction to Probability | Analytical Methods for Applied Mathematics and Statistics | Mathematical Statistics I | Fundamentals of Computing | Design and Analysis of Categorical Data | Regression Theory | Statistical Learning | Big Data Analysis | Simulation and Modeling

Stony Brook University (SUNY Korea) Incheon, Republic of Korea
B.S. in Applied Mathematics and Statistics | GPA:3.75 *May 2023*
Relevant Courses: Probability Theory | Data Mining | Operations Research II: Stochastic Models | Statistical Laboratory

SKILLS

Programming Languages: Python, R, and Matlab
Database: SQL
Spoken Languages: Korean (Fluent), English(Advanced)

ACADEMIC PROJECTS

Predicting the Water Status Using Machine Learning *August 2022 – December 2022, Stony Brook, New York*
- Developed a Python-based random forest model to classify water quality
- Utilized Principal Component Analysis (PCA) to reduce data dimensionality and enhance analysis efficiency, which significantly improved predictive accuracy

Advanced Regression Models Project *August 2023 – December 2023, Stony Brook, New York*
- Implemented and evaluated Ordinary Least Squares (OLS), Ridge, and Lasso regression models in Python, using Mean Squared Error (MSE) for performance comparison; focused on mitigating overfitting and optimizing model performance

Reducing Dimensions and Visualizing the Iris Dataset Using PCA *August 2024 – December 2024, Stony Brook, New York*
- Applied PCA to effectively reduce the dataset from four dimensions to two principal components, capturing over 95% of the dataset's variability and highlighting key data insights
- Utilized R's ggplot2 for dynamic visualization of PCA results, which clearly differentiated three Iris species clearly
- Conducted detailed analysis of clustering patterns within each species, identifying distinct data structures and potential classification boundaries

Predicting Roadkill Risk in Hongcheon, Gangwon (Korea) *July 2025 – August 2025, Seoul, Korea*
- Built a geospatial ML pipeline (GeoPandas spatial joins, engineered features: nearest wildlife-corridor distance, road density/traffic proxies, landform context) and trained Gradient Boosting, SGD, ANN(SGD).
- Selected Gradient Boosting as best; Val Acc ≈ 0.98–1.00, Macro-F1 ≈ 0.96–0.99 via train/validation and cross-validation under a leave-Hongcheon-out setup.
- Shipped interactive Folium/Tableau dashboards; produced ranked high-risk grids (e.g., grid_364) to guide mitigation.

WORK EXPERIENCE

SUNY KOREA Incheon, Republic of Korea
Teaching Assistant *August 2019 – June 2021*
- Provided two hours of weekly office hours, directly supporting over 40 students in mastering concepts in Precalculus, Linear Algebra, and Calculus 2, leading to improved academic performance
- Independently conducted recitation sessions for Precalculus to 40 undergraduate students, effectively supplementing primary lecture content and enhancing students' ability to keep pace with core curriculum demands

Tutor *February 2020 – June 2020*
- Tutored four students weekly in Calculus 1, focusing on clarifying concepts and assisting with assignments
- Employed personalized teaching methods to address individual learning styles and difficulties