Hannah Bäck

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https://hannahjbs.github.io/hannahjbs

SKILLS

Programming Languages: Python; R; SQL; SAS; Java
Programming Skills: git & version control; object-oriented programming; algorithm design; data cleaning
Data Visualization: matplotlib; ggplot2; seaborn
Statistics: high-dimensional data; bootstrapping; classification and cluster analysis; flexible & non-parametric modeling; statistical learning
Communication: ppt presentation; technical report writing; data storytelling; documentation

EXPERIENCE

University of Iowa   **Sept. 2022 – Present**
Undergraduate Researcher - Geography Department   *Iowa City, IA*
- Designed Python code to harness remote sensing data for the detection of harmful algal blooms
- Analyzed the use potential of satellite and trail camera data sources by cross referencing with water quality tests
- Created geospatial time series plots of algal blooms using satellite data

National Institute of Environmental Health Science (NIEHS)   **May 2023 – August 2023**
Biostatistics Intern   *Durham, NC*
- Implemented a shape-constrained semi-parametric model in R for the analysis of dose-response curves in toxicology testing
- Devised an adaptive bootstrapping algorithm to improve computational efficiency by 25%
- Conducted a comprehensive assessment of model performance against traditional logistic regression methods
- Delivered presentations to both the immediate team and broader audiences, including the biostatistics department

Quantitative Research in the Life and Social Sciences Program (QRLSSP)   **May 2022 – August 2022**
Undergraduate Researcher   *Tempe, AZ*
- Developed an inter-coupled ordinary differential equation model in Python through object-oriented programming
- Designed a reduced complexity global Earth systems model to examine relationship between emissions schemes and temperature changes
- Presented research at Joint Math Meetings Conference; manuscript currently in review at Global Environmental Change-Advances

EDUCATION

University of Iowa   **Expected May, 2024**
BS, Data Science   *Iowa City, Iowa*
- 3.79/4.0 GPA
- *Coursework includes:* Statistical Learning, Machine Learning, Probability and Statistics, Algorithms, Data Structures, Experimental Design, Applied Regression, Geographical Databases

- UI-Marc (Maximizing Access to Research Careers) Scholarship Recipient
- Participated in the 2024 University of Iowa "Dare to Discover" Banner Campaign