Katherine Gerot

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Languages, Frameworks & Tools

Data Analysis and Statistics

Python	Expert
R Language	Expert
SQL	Expert
Tensorflow	Advanced
Shiny	Advanced
PostgreSQL	Advanced
MongoDB	Advanced
Microsoft Azure	Advanced
GIS	Proficient
SAS	Proficient
SPSS	Proficient
Power BI	Proficient

Other Languages and Tools

Java	Expert
C / C++	Expert
TeX / LaTeX	Expert
Microsoft Office	Expert
Git	Expert
JavaScript	Expert
C# / .NET	Advanced
PHP	Advanced
MATLAB	Advanced
Fortran	Proficient
BASIC	Proficient
Django	Proficient

Relevant Coursework

Graduate Courses

Probability & Measure Theory
Theory of Statistics
Nonparametric Methods
Statistical Computing
Advanced Regression Analysis
Design & Analysis of Experiments
Bayesian Astrostatistics
Big Data in Astrophysics

Undergraduate Courses

Design & Analysis of Algorithms
Numerical Analysis
Machine Learning
Operations Research
Mathematical Statistics
Calculus I, II & III
Combinatorics

Education

Master of Science in Statistics *(expected)* May 2024
University of Minnesota–Twin Cities

Bachelor of Science in Mathematics (Honors)　May 2022
Specialization in Discrete Math and Cryptography
University of Nebraska–Lincoln

Bachelor of Science in Computer Science (Honors)　May 2022
Minor in Statistics
University of Nebraska–Lincoln

Work Experience

Graduate Teaching Assistant　Aug 2023 – *Present*
The University of Minnesota – Twin Cities

- Instructed non-statistics graduate students in advanced statistical concepts
- Helped develop undergraduate students' technical communication skills for consulting and research

Graduate Researcher　Oct 2022 – *Present*
The University of Minnesota – Twin Cities

- Conducted interdisciplinary research in statistics and astrophysics
- Developed new informative goodness-of-fit test for multivariate data
- Created R and Python packages for applying test to gravitational wave detection research

Software Development Intern　May 2022 – May 2023
LI-COR Biosciences – Environmental Division

- Developed data processing pipelines for real-time evapotranspiration data
- Modeled correlation patterns to reduce lag of environmental sensors by up to five seconds
- Translated statistical models into code for embedded devices
- Produced detailed documentation on pipelines and models

Statistical Researcher (Research Assistant)　May 2021 – Aug 2021
Sandia National Laboratories

- Improved precipitation prediction in collaboration with NOAA by integrating aggregation models and optimal transport methods
- Created faster data processing techniques for large precipitation data streams with limited processing power

Undergraduate Researcher　Aug 2021 – May 2022
The University of Nebraska – Lincoln

- Created an explainable binary classification algorithm for complex data as an alternative to the classical support vector machine

Software Engineering Intern　May 2020 – July 2020
Spreetail, Inc.

- Developed AWS data processing pipelines to streamline sales representatives' workload
- Upgraded back-end systems to .NET stack, reducing technical debt by 10%