Gracie Hayes

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EDUCATION

Ph.D. Statistics and Data Science —
Northwestern University (Evanston, IL)

SEPTEMBER 2022 - Anticipated JUNE 2027

- GPA: 3.7 / 4.0
- Society for Research on Effectiveness in Education (SREE)

M.S. Statistics and Data Science —
Northwestern University (Evanston, IL)

SEPTEMBER 2022 - MARCH 2024

- GPA: 3.6 / 4.0

B.S. Mathematics and B.A. Sociology —
Wheaton College (Wheaton, IL)

AUGUST 2018 - MAY 2022

- GPA: 3.8 / 4.0
- Dean's List

SKILLS & COURSES

- R/RStudio
- Python

COURSES

- Meta Analysis
- Causal Inference
- Experimental Design
- Survey Sampling
- Machine Learning
- Bayesian Statistics

RESEARCH EXPERIENCE

PhD Researcher — *Northwestern University*   APRIL 2024 - PRESENT
Evanston, IL

- Translate real world phenomena into statistical theory by developing a novel selection model for meta analysis (MA) data
- Derive relevant theoretical results to characterize this model including moments and MLE estimators
- Write a researcher-friendly algorithm which uses this model to identify & mitigate publication bias in MA data
- Collaborate with advisor and colleagues to incorporate current methods and new findings

Applied Statistics REU Researcher — *Worcester Polytechnic Institute*   JUNE - AUGUST 2021
Worcester, MA

- National Science Foundation Research Experience for Undergraduates (REU).
- Sponsored by Wellington Management to research machine learning methods: RPCA, Autoencoders.
- Used Python & R to develop techniques for detecting decorrelation in financial time series.
- Worked alongside peers and faculty to apply statistics to real-world problems.
- Presented weekly updates to academic and industrial audiences in professional settings.
- Accepted to present our research at the Joint Math Meetings 2022 conference in January.

Data Analyst Intern — *Sunshine Gospel Ministries*   AUGUST - DECEMBER 2020
Chicago, IL

- Collaborate with the data team to pose and investigate research questions.
- Collect crime statistics from public sources and organize them into Excel sheets.
- Analyze and graphically represent long-term trends using Python Jupyter Notebooks.
- Present a PowerPoint of our data analysis to Chicago Police District 3 and community.

OTHER EXPERIENCE

Data Science Teaching Assistant — *Northwestern University*   SEPTEMBER 2023 - PRESENT
Evanston, IL
- Assisted students in Data Visualization, Experimental Design & Analysis, and introductory courses
- Worked closely with the professor to assess the progress of the class and of individual students
- Graded homeworks and exams consisting of R code and data analysis
- Supported students as they connected statistical theory to application and interpretation

NSF & IES Summer Institute Assistant — *Northwestern University,*   JUNE - JULY 2023, 2024
Evanston, IL
- Supported education researchers during NSF & IES trainings on experimental design & analysis
- Answered questions about the theory & application of causal inference, cluster randomized trials, and efficacy studies
- Led a group of experienced researchers in education through designing and analyzing a randomized experiment to address a real world issue
- Evaluated group work by critiquing group presentations

PRESENTATIONS & PUBLICATIONS

- Amdat, W. C. 2021. "The Chicago Hardship Index: An Introduction to Urban Inequity." Journal of Statistics and Data Science Education 29 (3): 328–36.

- 3rd Place Award: "Decorrelation Detection in Financial Time Series Data." Wheaton College 2021 Summer Research Poster Session (October 2021, Wheaton, IL).

- "Decorrelation Detection in Financial Time Series Data." Joint Math Meetings 2022 Pi Mu Epsilon Undergraduate Poster Session (April 2022, Virtual).