

ALISABETH A. MARSTELLER

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EDUCATION

Grad. 06/18

PRINCETON UNIVERSITY

Princeton, NJ

- **Degree:** B.A. in Astrophysical Sciences, *cum laude*
 - **Senior Thesis:** "Modeling Galaxy Bias with Neural Networks"
 - **Relevant Coursework:**
 - Applied Social Statistics (Graduate-level course)
 - Fundamentals of Machine Learning
 - Analysis of Big Data
 - Modeling & Observing the Universe
 - **Other Accomplishments:**
 - Ivy League Swimming Champion
 - 2016 Olympic Swimming Trials Qualifier
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WORK EXPERIENCE

2020 – 2025

September – March

VIOLENCE & INEQUALITY PROJECT – PRINCETON UNIVERSITY

Princeton, NJ

Lead Data Scientist/Programmer

- Work from this role has appeared in [The New York Times](#), [The Washington Post](#), and [The Atlantic](#)
- Led data science operations for a multimillion-dollar grant, integrating multiple datasets – population, spatial, survey, and network data.
- Primary developer for a large-scale agent-based simulation of urban violence (~200,000 agents):
 - Created statistical models to translate violence theory into concrete attributes and behaviors
 - Designed experimental frameworks to identify and quantify sources of uncertainty
 - Implemented validation and sensitivity tests to ensure model accuracy and reproducibility
 - Conducted detailed literature reviews to empirically inform simulation parameters
- Created and presented visualizations to cross-disciplinary collaborators from criminology and epidemiology.
- Automated end-to-end data pipeline for AmericanViolence.org, including web-scraping, cleaning, and validating shooting and murder data across 100 cities for a public violence statistics database

2019 – 2020

January – September

ENTERPRISE PRICING AND PROMOTION - 84.51st (THE KROGER CO.)

Cincinnati, OH

Data Scientist

- Analyzed large transactional datasets using SQL/Python to identify critical pricing and promotional trends for business intelligence
- Developed a custom statistical metric to rank product promotional effectiveness, enabling non-technical stakeholders to optimize frequent sales decisions
- Applied Google's Causal Impact methodology to measure pricing change effects on customer behavior, directly informing division heads' strategic decisions
- Led Python training workshops for data science teams.

2018

June – December

CSAFE GLOBAL

Dayton, OH

Data Analyst

- As the only data analyst, led data quality management and logistics optimization for global leasing of temperature-controlled containers, identifying key patterns through exploratory data analysis.
- Designed a model for customer demand forecasting and implemented a recommendation algorithm for where to send container supplies.
- Formulated standard protocols for data entry and collection that enhanced analytics capabilities and ensured data integrity.

Summer 2017

June - August

LEGENDARY ENTERTAINMENT APPLIED ANALYTICS

Boston, MA

Analytics Intern

- Developed a Random Forest Regression model to identify predictors of ticket purchases using sales data and digital engagement metrics
 - Implemented a recurrent neural network in Python to classify discourse patterns in Reddit user comments, enabling automated sentiment analysis for marketing intelligence.
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OTHER WORK

2024 - 2025

October - Present

GRADUATE STUDENT RESEARCH – PRINCETON UNIVERSITY

Princeton, NJ (remote)

Statistics Consultant

- Conducting exploratory and regression analyses for a nationally representative survey experiment in Sociology to quantify the causal effects of an experimental treatment mechanism on various survey responses.
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SKILLS

Technical Skills: **Expert** in R (dplyr, sf, tigris, tidycensus, doParallel, igraph), statistical modeling, spatial data analysis, data exploration, KPI/derived metric development, LaTeX, Github, Microsoft Office; **Proficient** in Python (numpy, pandas, scipy, sklearn, spacy, selenium), dashboard creation (Streamlit, Tableau); **Experience** in Python (transformers, torch, keras), PL/SQL, PySpark, NLP, LLM fine-tuning

Professional Skills: project management, communication with non-technical audiences, rigorous attention to detail, independent, intensely curious

Interests: NLP for measuring writing styles, experimental methods for evaluating LLM output, film analytics, poetry, piano, swimming