

# ALISABETH MARSTELLER

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## SUMMARY

Data Scientist with 7 years of experience designing practical, interpretable models for industry and academic research. Specializing in creating bespoke measurements for specific use cases with a particular ability to transform ambiguity into concrete insights.

## EDUCATION

B.A. in Astrophysical Sciences

Princeton University, 2014 - 2018

Accomplishments: *cum laude*, Ivy League Swimming Champion, 2016 Olympic Swimming Trials Qualifier

## TECHNICAL SKILLS

- **R:** dplyr, sf, tigris, tidycensus, doParallel, igraph
- **Python:** numpy, pandas, scipy, sklearn, spacy, transformers, torch
- **SQL**
- **Data analysis:** custom metrics, statistical modeling and inference, supervised and unsupervised learning, natural language processing & analysis
- **Data visualization** – Tableau, Streamlit, ggplot2
- Process automation
- MS Office – Excel, Word, Powerpoint

## PROFESSIONAL SKILLS

- End-to-end project management
- Rigorous attention to detail
- Self-motivated and intensely curious

## PROFESSIONAL EXPERIENCE

Princeton University

**Lead Data Scientist/Programmer**, Princeton, NJ

Sept 2020 – March 2025

- Managed the development of an agent-based model (ABM) that probabilistically simulates the spread of violence across urban communities.
  - Conducted independent research of violence theory, gang dynamics, peer exposure to violence, and general ABM methodology.
  - Ingested and processed 14 different data sources in various formats, including longitudinal, spatial, and network data.
  - Designed bespoke statistical methods to replicate the time-dependent effects of violence across geography and social networks.
  - Implemented validation and sensitivity tests.
  - Successfully created a flexible and fully functioning model that can predict the impact of different sampling strategies adopted by community violence interventions on shootings in Chicago.
- Presented methods and findings to collaborators from criminology and epidemiology in emails and bi-weekly meetings.
- Automated the process of web-scraping, cleaning, and validating public data on shootings and murders from over 100 sources for AmericanViolence.org: a public database of aggregated murder and shooting counts for 100 American cities. Maintained and updated this database monthly.

84.51° (The Kroger Co.) - Enterprise Pricing and Promotion

**Data Scientist**, Cincinnati, OH

Jan 2019 – Sept 2020

- Synthesized large transactional datasets using SQL and Python to drive business intelligence around prices and promotions.
- Created a custom metric to rank the promotional effectiveness of products. Presented results to non-technical stakeholders, who regularly used these insights for assigning products to frequently changing sales and promotions.
- Applied Google's Causal Impact tool to analyze effect of pricing changes on Kroger customers, which directly impacted the decisions of division heads.
- Helped lead Python training for the organization's data scientists.

Legendary Entertainment Applied Analytics

**Quantitative Analytics Intern**, Boston, MA

June 2017 – Sept 2017

- Built a Random Forest Regression model to identify the best proxy for Fandango ticket purchases using ticket sales data and digital ad engagement metrics.
- Built a recurrent neural network in Python for the purpose of classifying the discourse acts of Reddit comments. Used this in practice to summarize users' reactions to the casting of actors in *Kong: Skull Island*.

## OTHER WORK

- **Princeton University** (Oct 2024 - present): Data Consultant for a nationally representative survey experiment (paper forthcoming)