

# Nathen Byford | Resume

Statistical Consultant

Status: Statistical Consultant for Statistical Consulting Center, Baylor University  
Field: Data Science, Statistical Analysis, Spatial Statistics  
Techs: R, bash, Python, Regression Modeling, Machine Learning

Waco, Texas  
natebyford.com  
nathenbyford@gmail.com

## Summary

Ph.D. student at Baylor University working on projects in spatial statistics, anomaly detection, bayesian modeling, and computational statistics. In addition to working on research I also work for the statistical consulting center helping clients from a wide range of fields from social work to geosciences. Experienced in data manipulation, data visualization, and multiple modeling techniques.

## Experience

Statistical Consultant - Statistical Consulting Center, Baylor University Sep. 2023 - Present

- \* Perform statistical analysis for diverse range of clients and projects
- \* Analyses of large scale and unstructured data sets with R and Bash
- \* Present results in clear and elementary manner for clients

Graduate Teaching Assistant - Baylor University Aug. 2022 - Aug. 2024

- \* Teach supplemental instruction sessions for introduction to statistics
- \* Hold office hours for introductory statistics and statistical methods
- \* Grade homework, quizzes, and exams

Undergraduate Researcher - Oregon State University June 2021 - Aug. 2021

- \* Developing new methods to test for Benford's law in real data
- \* Implementing methods in R
- \* Comparing tests for greatest power and lowest error rate
- \* Also look into Benford's law in english words and texts

Data Science Fellow - Baylor University June 2020 - Aug. 2020

- \* Worked directly with stakeholders at Denver Water to analyze effectiveness and efficiency of water filtration
- \* Produce statistical analysis and interpret results

## Education

Ph.D. in Statistical Science - Waco, Texas Aug. 2022 - Present

- \* Project: Correcting for under reporting in Bayesian Spatial Scan Statistics
- \* Developing and implementing Bayesian method to model under-reported and over-dispersed spatial counts

Master of Science in Statistical Science - Waco, Texas Aug. 2022 - Dec. 2023

- \* Project: Anomaly Detection in Time Series Data
- \* Focus on Statistical Methods, Mathematical Statistics, and Computational Statistics.

Bachelor of Science in Statistical Science - Waco, Texas Aug. 2019 - May 2022

- \* Major Courses: Mathematical Statistics, Computational Statistics, Database Design.

## Interdisciplinary Collaborations

Analysis of Results for Social Work Dissertation - Consulting project

Dec. 2023 - Apr. 2024

- \* Work alongside PhD candidate in Social Work to complete statistical analysis for dissertation.
- \* Analyze survey results with descriptive statistics and logistic regression with model selection
- \* Communicate results clearly to client along with methods

## Projects

Spatial Under-Reporting of COVID-19 - Spatial Statistics final project

May 2024

- \* Project: Correcting under-reporting in over-dispersed spatial count data
- \* Developing and implementing Bayesian method to model under-reported and over-dispersed spatial counts

Anomaly Detection in Time Series Data - Baylor University

Dec. 2023

- \* Anomaly detection using data driven methods
- \* Methods include; regression leverage points, STL, neural network, and isolation forest

Capstone project (Planarian Growth) - Baylor University

May 2022

- \* Worked with freshmen in BIO 1406 as statistical consultant
- \* Analyzed the growth of planarian based on light exposure
- \* Guided students from experimental design through to presentation of results