# **Taylor Grimm**

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#### EDUCATION

Baylor University Ph.D. in Statistics, GPA: 3.97/4.00	Waco, TX May 2025		
Dissertation: "Fault Detection in Multivariate Processes: Handling Autocorrelation, Con in Engineered Systems"	Detection in Multivariate Processes: Handling Autocorrelation, Contamination, and Small Sample Sizes is"		
Advisors: Dr. Amanda S. Hering and Dr. Kathryn B. Newhart			
Baylor University M.S. in Statistics, GPA: 3.94/4.00	Waco, TX December 2022		
Brigham Young University B.S. in Statistical Science, minor in Mathematics, GPA: 3.99/4.00	Provo, UT April 2021		
Experience			
Enterprise Mobility Data Scientist	St. Louis, MO (Remote) December 2024 - Present		
• Develop deep learning models to forecast key business metrics across 8500+ branches Python, AzureML, Databricks).	ep learning models to forecast key business metrics across 8500+ branches globally (TensorFlow/Keras, zureML, Databricks).		
• Constructed queries, tables, plots, and an interactive dashboard to identify key issues >75% improvement in model performance. (R, ggplot2, Scala/Spark, Python, Dash)	nstructed queries, tables, plots, and an interactive dashboard to identify key issues with data collection, resulting in a 5% improvement in model performance. (R, ggplot2, Scala/Spark, Python, Dash)		
Baylor University Graduate Assistant - Research	Waco, TXJuly 2022 - December 2024		
• Collaborated with interdisciplinary experts to comprehend data and processes, perform robust analyses, and effectively communicate results.			
• Designed and evaluated multivariate statistical methods to improve anomaly detection in complex processes.			
Developed interactive R Shiny applications to assist in exploratory data analysis of multiple variables across seve datasets.			
Graduate Assistant - Statistical Consulting	January 2022 – July 2022		
• Provided statistical consulting services to clients across diverse disciplines, delivering reports.	actionable insights and quality		

• Adapted to different problems by applying various statistical methods and ensuring statistical rigor.

Graduate Assistant - Data Science Workshop Development

- Assisted in the development of a data science workshop (using R) for water/wastewater treatment professionals.
- Created practice problems and solutions for topics ranging from data wrangling and visualization to statistical and machine learning models.

#### **Brigham Young University**

Statistics Research Assistant

- Built and used multivariate Bayesian models (using R and Stan) to analyze and understand noisy environmental data.
- Contributed as second author to the development of a manuscript, resulting in publication in a reputable journal.

## Relevant Coursework

- Multivariate analysis
- High-dimensional data analysis
- Time series
- Advanced data-driven methods

• SAS programming

- Bayesian theory and methods • Design of Experiments/Clinical Trials

• Computational statistics (R)

August 2021 – December 2021

Provo, UT

June 2020 - May 2021

## PUBLICATIONS

#### Published/Accepted

- Grimm, T. R., Newhart, K. B., and Hering, A. S. (2025). Nonparametric threshold estimation of autocorrelated statistics in multivariate statistical process monitoring. *Journal of Chemometrics* 39 (2), e70004. https://doi.org/10.1002/cem.70004.
- Grimm, T. R., Branch, A., Thompson, K. A., Salveson, A., Zhao, J., Johnson, D., Hering, A. S., and Newhart, K. B. (2024). Long-term statistical process monitoring of an ultrafiltration water treatment process. ACS ES&T Engineering, 4 (6), 1492-1506. https://doi.org/10.1021/acsestengg.4c00042
- Heiner, M., Grimm, T., Smith, H., Leavitt, S. D., Christensen, W. F., Carling, G. T., and St. Clair, L. L. (2023). Multivariate receptor modeling with widely dispersed Lichens as bioindicators of air quality. *Environmetrics*, 34 (3), e2785. https://doi.org/10.1002/env.2785

#### In Progress

- 3. Grimm, T. R., Villez, K. Newhart, K. B., and Hering, A. S. (2025+). A review of methods for handling limited or contaminated historical data in statistical process monitoring. *Under Review*.
- 2. Grimm, T. R., Newhart, K. B., and Hering, A. S. (2025+). A robust self-starting Bayesian approach for multivariate phase II monitoring. *Under Review*.
- 1. Salim Dantas, M., **Grimm, T. R.**, Marks, C. A., Cath, T. Y., Newhart, K. B., and Hering, A. S. (2025+). Assessing the long-term performance of data-driven forecasting models of ammonia in a full-scale wastewater treatment plant. *In Preparation.*

## Research Experience and Interests

- Outlier/anomaly detection
- Time series

• Bayesian methods

- Multivariate statistics
- Machine learning
- PRESENTATIONS
- "Nonparametric Threshold Estimation for Autocorrelated Monitoring Statistics", Joint Statistical Meetings, American Statistical Association, Portland, OR. (August 2024)
- "Multivariate Fault Detection for Water Reuse: An Ultrafiltration Case Study", Water Quality Technology Conference, American Water Works Association, Dallas, TX. (November 2023)
- "Nonparametric Threshold Estimation of Autocorrelated Statistics in Multivariate Statistical Process Monitoring", Southern Regional Council on Statistics, Baylor University, Waco, TX. (June 2023) †
- "Bayesian Multivariate Receptor Modeling with Lichens as Biomonitors", Student Research Conference, Brigham Young University, Provo, UT. (February 2021)

 $\dagger:\mathrm{poster}$ 

#### SKILLS

- R: tidyverse (dplyr, ggplot2, etc.), Keras (TensorFlow), shiny, RMarkdown/Quarto, rstan, rjags, caret, tidymodels, torch
- **Python:** pandas, numpy, Keras (TensorFlow), PySpark, seaborn, scikit-learn, PyTorch
- Other: SQL, Databricks, MLflow, Azure, SAS, Git/GitHub

### LANGUAGES

- English: Native
- Tagalog: Advanced

## Scholarships and Awards

•	Boyd Harshburger Travel Award (Southern Regional Council On Statistics)	2023
•	Outstanding 1st Year PhD Student (Department of Statistical Science, Baylor University)	2021 - 2022
•	Graduate School Fellowship (Baylor University)	2021
•	Academic Scholarship — Brigham Young and Wessell/Marshall Memorial (Brigham Young University)	2018 - 2021
•	Eagle Scout (Boy Scouts of America)	2015