Taylor Grimm

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Education

Baylor University *Waco, TX*

Ph.D. in Statistics, GPA: 3.97/4.00 *May 2025*

- Dissertation: "Fault Detection in Multivariate Processes: Handling Autocorrelation, Contamination, and Small Sample Sizes in Engineered Systems"

Areas of expertise: statistical process control (anomaly detection), machine learning, time series, multivariate statistics

Relevant Coursework: Advanced data-driven methods • Multivariate analysis • High-dimensional data analysis • Time series • Bayesian methods

Baylor University *Waco, TX*

M.S. in Statistics, GPA: 3.94/4.00 *December 2022*

Brigham Young University *Provo, UT*

B.S. in Statistical Science, minor in Mathematics, GPA: 3.99/4.00 *April 2021*

Experience

Enterprise Mobility *St. Louis, MO (Remote)*

Data Scientist *December 2024 - Present*

- Enhanced existing deep learning forecasting models, achieving ∼10% improved accuracy and 5x computation time savings by implementing transfer learning and a weighted sampling approach to utilize additional data while reducing the required training data size.
- Develop deep learning models to forecast key business metrics across 8500+ branches globally (TensorFlow/Keras, Python, Databricks).
- Constructed queries, tables, plots, and interactive dashboards to identify key data issues, resulting in a >75% improvement in model performance. (R, ggplot2, (Py)Spark, Python, Dash)

Baylor University *Waco, TX*

Graduate Assistant *August 2021 - December 2024*

- Collaborated with interdisciplinary experts to comprehend data and processes, perform robust analyses, and effectively communicate results.
- Developed interactive R Shiny applications to assist in exploratory data analysis and model evaluation.
- Provided statistical consulting services to clients across diverse disciplines, delivering actionable insights and quality reports.
- Assisted in the development of a data science workshop (using R) for water and wastewater treatment professionals.
- Created practice problems and solutions for topics ranging from data wrangling and visualization to statistical and machine learning models.

Skills

R: tidyverse (dplyr, ggplot2, etc.), Keras/TensorFlow, shiny, RMarkdown/Quarto, rstan, rjags, caret, tidymodels, torch

Python: pandas, numpy, Dash, Keras/TensorFlow, PySpark, seaborn, scikit-learn, PyTorch

Other: SQL, Databricks, Scala, MLflow, Azure, SAS, Git/GitHub

Statistics and Machine Learning: statistical modeling, hypothesis testing, mixed models, Bayesian methods, regression, classification, PCA, random forests, boosting (e.g., XGBoost), SVM, deep learning

Publications

- **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), e700004. [Link]
- **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 [Link]
- 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. [Link]
- **Grimm, T. R.**, Villez, K. Newhart, K. B., and Hering, A. S. (2024+), "A review of methods for handling limited or contaminated historical data in statistical process monitoring," *Under Review*.
- **Grimm, T. R.**, Villez, K. Newhart, K. B., and Hering, A. S. (2024+), "Robust self-starting Bayesian control charts for multivariate phase II observations," *Under Review*.