

Thomas Sigall

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EDUCATION AND HONORS

Georgetown University, Graduate School of Arts & Sciences Washington, D.C
Master's of Science in Data Science and Analytics May 2025

- Cumulative GPA: 4.0/4.0
- Relevant Coursework: Probability Modelling and Statistical Computing, Applied Time Series, Neural Networks and Deep Learning, Advanced Data Visualization, Machine Learning

Villanova University, College of Liberal Arts and Sciences Villanova, PA
Bachelor of Arts in Philosophy May 2023

- Cumulative GPA: 3.74/4.0, Philosophy GPA: 3.87/4.0
- Minor in Computer Science, Minor in Statistics

PROFESSIONAL EXPERIENCE

Pro Football Focus Remote
Data Collection and Analysis April 2022 – December 2022

- Collected data on various professional and collegiate football games, both during live games and after game completion.
- Focused on individual player data including player position on field, tracking pre- and post-snap movement, linemen gap alignment, and other variables using both broadcast and all-22 footage
- Clients included professional and collegiate teams, enabling them to analyze their games at a higher level and gain a better understanding of upcoming opponents.

SKILLS

- **Programming Languages:** Python, R, Java, HTML, CSS, JavaScript, SQL
- **Neural Networks and Deep Learning:** TensorFlow, PyTorch, Keras
- **Time Series Analysis:** ARIMA/SARIMA models, ARIMAX/SARIMAX/VAR models, ARCH/GARCH financial models, RNN/GRU/LSTM deep learning models, interrupted time series
- **General Data Science:** Web scraping/APIs, data visualization, data cleaning, natural language processing, clustering, decision trees, hyper-parameter tuning, association rule mining

PROJECTS

NFL Decision Making November 2023
<https://tsigall.georgetown.domains/dsan5000>

- Analyzed 4th down decision-making in the NFL. Attempted to determine what factors coaches consider when making a decision on 4th down.
- Used a variety of techniques to evaluate decisions made by coaches, including clustering analysis to find coaches that behave similarly, training a Gaussian Naïve Bayes model to predict decisions on 4th down, and training decision trees on individual coaches to compare relative feature importance, giving us a way to evaluate which features coaches consider when making these decisions.

Crime in New York City November 2023
<https://tsigall.georgetown.domains/dsan5600>

- Analyzed crime rates in New York City using publicly available arrests through New York City's Open Data API dating back to 2006.
- Performed time series analyses on multiple types of crime. A variety of models were fitted, including ARIMA/SARIMA models, SARIMAX models when exogenous variables were considered, VAR models when comparing multiple time series, and ARCH/GARCH models when financial series were considered. Deep learning models including RNN, GRU, and LSTM models were also fitted.
- An interrupted time series analysis was done to determine the effectiveness of certain treatments, or policy interventions, on crime rates.