Drake Watson

Irvine, California

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Experience

Chapman University **September 2023 – Current**

Statistical Research Programmer *Irvine, CA*

- Built out an ETL pipeline with pandas for locally reading and annually updating dataset of over 300M observations.
- Created framework for performing statistical analysis in support of diverse research manuscripts focused on drug prescriptions for the state of California from 2010-2023.
- Assisted development of several publications while applying techniques such as data processing, geospatial analysis, interrupted time series, difference of means testing, data visualization, and manuscript editing.

Publications

Examining Bias in the Narxcare Score **Value in Health, June 2024**

Dr. Sherry Wang Research Team, Chapman University *Irvine, CA*

- Investigated potential bias in clinical decision support systems and how this impacts equitable opioid prescribing.
- Found that protected demographic information significantly affected the publicly disclosed scoring criteria used by a prominent AI/ML-based clinical decision support system.
- Uncovered how patients payment type, age, and race all meaningfully affect the way that they are judged by the algorithm and possibly results in discriminatory prescribing practices across the country.

Education

University of California – Irvine **2023 – Current**

- Masters in Data Science

University of Washington – Seattle **2020 – 2022**

- Bachelors in Mathematics / Data Science Minor
- Thomas P. Bleakney Endowed Scholarship in Mathematics – 2022

Tacoma Community College **2017 – 2020**

- Associates in Mathematics / Computer Science

Projects

Changes in Opioid Prescribing Before and After COVID-19 | *python, scipy, statsmodels* **August 2024**

- Constructed a Poisson regression model to perform interrupted time series analysis interrogating COVID-19's affect on drug prescription behaviors in California.
- Discovered statistically significant evidence that multiple problematic drug prescribing patterns had meaningfully increased following the onset of COVID-19.
- Developed visualizations and final manuscript currently seeking publication.

NFL Quarterback Projection | *Python, R, sklearn, keras* **July 2024**

- Engineered several diverse NFL quarterback datasets into a curated database posted publically on Kaggle.
- Defined and calculated statistically meaningful tiers of quarterback success in a way that reflected real-world consensus.
- Trained a neural network using keras and tensorflow with the purpose of predicting quarterback success levels and found the strongest possible OLS linear regression model.
- Wrote a detailed article walking through creation and decision making process of the project and published to Medium.

Video Game Sales Projections | *python, scikit-learn, plotly* **Spring 2021**

- Created a dataset encapsulating global video game performance from several unique sources, performed EDA to find meaningful correlations, and developed an interactive Tableau dashboard for presentation.
- Built several decision tree models using scikit-learn in an attempt to train a model for sales projection performance.

Skills

Subjects: Data Analytics, Database Management, Machine Learning, Statistics
Languages: Python, R, SQL, HTML, Vega-Lite
Developer Tools: VS Code, PyCharm, Tableau, RStudio, GitHub, Observable, Medium
Libraries: Pandas, scikit-learn, keras, matplotlib, ggplot2, dplyr, statsmodels, tensorflow