Lou Zhou

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Education

Rice University **Expected Graduation May 2027**
Bachelor of Arts in Statistics and Sport Analytics(3.93 GPA) *Houston, TX*

Relevant Coursework: Computational Thinking(COMP 140), Statistics for Data Science(STAT 315), Multivariable Calculus(MATH 212)

Experience

Rice Sport Analytics Team **October 2023 – Present**
Technical Team Analyst *Houston, TX*

- Develop and maintain internal analytics programs for Rice University Athletics
- Utilize advanced statistics and analytics to contribute to high-value projects for Rice Athletics
- Leads an analysis into the correlation between practice intensity and offensive line performance, providing valuable insights for performance enhancement strategies.

Shelby County Election Commission **June 2023 – July 2023**
Summer Intern *Memphis, TN*

- Analysis and cleaning of past electoral and voter registration data
- Creation of an in-house Python program that updated pre-2022 precinct voter data to redrawn voting precincts
- Development of a second in-house Python program that amalgamated per-person voting data to give per-voting method and per-primary counts for each Shelby County Voting Precinct for given elections

Air Force Research Laboratory **June 2022 – July 2022**
Summer Intern *Dayton, OH*

- Created Python program which located and cropped certain objects of interest in a busy image through a normalized cross-correlation algorithm, cleaned 15620 images with 98% success rate
- Collected photos within the MARVEL Lab of scale model tanks which emulated photos taken from aircraft
- Completed Controlled Unclassified Information (CUI) Training
- Presented Poster and Final Technical Paper on the project to AFRL Administration

Projects

Play Value Without Penalty **October 2023 - January 2024**

- Proposed a way to gauge tackling penalties in the NFL by accounting for the yardage the offense lost due to the penalty in a strictly instant replay refereeing environment, limiting the scope of the variables
- Usage of two random forests to predict the odds of a missed tackle as well as the potential yardage gain without the influence of the tackler who caused the penalty
- Submitted as part of the 2024 Big Data Bowl and academic credit through the Rice Department of Sport Management

Breaking the Cycle: Reducing Recidivism in Iowa State Prisons **October 2022 - May 2023**

- Team Lead of work which looked to estimate the cost and the root causes of recidivism within the Iowa state prisons
- Development of a Feedforward Neural Network(FNN) which predicted the odds a specific inmate, given certain variables, would re-offend as well as a Monte Carlo Simulation which looked to predict the fiscal cost of recidivism to Iowa.
- Submitted for the 2023 Modeling the Future Challenge(MTFC), finishing 2nd place nationally out of 227 teams and receiving a $15,000 team award.

Riding into the Future: Evaluating E-Bikes **March 2023**

- Team Lead of work which estimated the growth of E-Bikes and investigated the factors and effects of this growth
- Usage of multivariable linear regression and sentiment analysis to predict the popularity and growth of E-Bikes
- Utilized feature importance, sensitivity analysis, and a Monte Carlo Simulation to analyze the variables regarding this growth and its effects on carbon emissions
- Created as part of the Mathworks Math Modeling Challenge, a 14-hour data science competition, receiving an honorable mention distinction in technical computing(Top 3% of submissions)

Technical Skills

Languages: Python(Proficient), Java(Intermediate), R(Beginner)
Libraries: pandas, numpy, scipy, matplotlib, scikit-learn, openCV, seaborn, Keras
Technologies: Anaconda, VS Code, Excel, RStudio, Jupyter, Google Colab