# Lou Zhou

Houston, TX
lz80@rice.edu www.linkedin.com/in/lou-zhou/ lou-zhou.github.io/ U.S. Citizen

## Education

**Rice University** **Expected Graduation May 2027**

*Bachelors of Arts in Statistics and Sport Analytics(3.89 GPA)* *Houston, TX*

**Relevant Coursework**: Introduction to Sport Analytics, Linear Algebra, Introduction to Program Design, Linear Regression, Elements of Analysis, Advanced Statistical Methods, Stochastic Methods, Tools and Models for Data Science

## Experience

**Carnegie Mellon University** **June - July 2025**

*Undergraduate Researcher | R, tidyverse, ggplot, Git* *Pittsburgh, PA*

- Selected for fully funded research position focused on applied statistics and machine learning in sports
- Analyzing QB decision-making ability by building R ranking models to estimate throw target and extracting features from NFL tracking and event data

**Rice University** **August 2024 - Present**

*Research and Teaching Assistant | Python, pandas, NumPy, PyTorch, Git, Matplotlib, SQLite* *Houston, TX*

- Expanded data availability for ML training by broadening data pipeline support to 3 new soccer data provider formats with Pandas/NumPy
- Refined soccer pass quality estimations, adding features like player velocity to a PyTorch CNN to allow the model to more accurately capture game context
- Achieved a 94% student satisfaction rate from semester survey by guiding 17 students as the sole TA in an applied data science course through in-class help and office hours

**St. Jude Children's Research Hospital** **June - July 2024**

*Biostatistics Research Assistant | R, tidyverse, ggplot, plink* *Memphis, TN*

- Created ALS patient-specific disease evolution projections by building models to forecast ALS progression using functional PCA on longitudinal patient data in R
- Contributed to understanding of ALS genetic risk factors by identifing 3 progression markers with Genome-Wide Association Studies on genotype and PCA data using HPC resources

**Shelby County Election Commission** **June - July 2023**

*Data Analyst Intern | Python, pandas, NumPy* *Memphis, TN*

- Streamlined post-redistricting updates and reduced manual effort by reassigning precincts to 500,000+ voter records with Pandas
- Improved election resource planning by enhancing Python tools to compute voting-method and precinct turnout metrics

## Projects

**Team Coin Flip: Travel Fatigue and Performance** **January 2024**

- Placed 2nd of 59 teams at the 36-hour 2024 Rice Datathon by creating XGBoost models with scikit-learn and a modified ELO ranking to assess travel impact on performance

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

- Improved recidivism risk prediction by building a Keras neural network (0.85 AUC-ROC) to predict recidivism probability, outperforming logistic regression (0.64 AUC-ROC)
- Delivered economic burden estimates and policy guidance using Monte Carlo simulations and SHAP values in Python to model variability and recidivism risk factors
- Awarded 2nd place of 227 teams in the 2023 Modeling the Future Challenge, earning a $15,000 team prize

## Additional

**Languages & Tools**: Python(sklearn, pandas, NumPy, PyTorch, Keras), R(tidyverse, ggplot), Java, SQLite, Git
**Activities**: *Technical Lead*, Rice Sport Analytics Team (2025–2026) · *Tracks Organizer*, 2025 Rice Datathon · *Mentee*, 2025 MIT Sloan Sports Analytics Mentorship Program