

# LOU ZHOU

Houston, TX

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Website: [lou-zhou.github.io/](https://lou-zhou.github.io/) U.S. Citizen

## Education

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### 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

**Languages & Tools:** Python(scikit-learn, pandas, NumPy, PyTorch, Keras), R(tidyverse, ggplot, face, glmnet, shiny, caret), XGBoost, Java, SQLite, Git, EC2, EMR

## Experience

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### Carnegie Mellon University

June - July 2025

Undergraduate Researcher | R, tidyverse, ggplot, Git, XGBoost

Pittsburgh, PA

- Matched public research deep learning accuracy (59.9% vs. 59.8%) on NFL throw target prediction using simpler XGBoost model with two novel features describing potential separation and QB vision
- Invited to present work at the 2025 Carnegie Mellon Sport Analytics Conference

### Rice University

August 2024 - Present

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

Houston, TX

- Reduced data processing time by 83% using pandas by redesigning a data processing pipeline that generated features from 300+ matches of soccer tracking and event data
- 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(e.g. 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, face, 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 identifying 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

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### Team Coin Flip: Travel Fatigue and Performance

January 2024

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

### 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 inmate recidivism probability, outperforming baseline models (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

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**Activities:** Technical Lead, Rice Sport Analytics Team (2025-2026) · Tracks Organizer, 2025 Rice Datathon · Mentee, 2025 MIT Sloan Sports Analytics Mentorship Program