

# Zack Mosley

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[Portfolio](#) | [LinkedIn](#)

## Education

### M.S. in Data Science

*University of California, San Diego*

La Jolla, CA

Expected Graduation: March 2026

University GPA: 3.80 /4.00

- Relevant Coursework: Statistics, Linear Algebra, Data Visualization, NLP, Big Data

### B.S. in Management Information Systems

*California State University, Sacramento*

Sacramento, CA

May 2024

University GPA: 3.80 /4.00

- Honors: **Magna Cum Laude**, Dean's Honor List
- Relevant Coursework: Machine Learning, Data Mining, Advanced Analytics, Data Mgmt

*A.S. in Accounting*

May 2021

*A.S. in Business Administration*

## Projects

### Car Value Predictor (Personal Project, [Full Project](#))

End-to-end vehicle price prediction dashboard using scraped data from Cars.com.

- Built ML pipeline: **scraped 84K+ listings**, engineered features, analyzed depreciation trends
- Evaluated 4+ models (RF, XGBoost, CatBoost, LightGBM); final model: **MAE \$1.7K, R<sup>2</sup> 0.96**
- Validated on new data collected 1 month later, maintained R<sup>2</sup> > 0.95 despite market fluctuations

### NYC Yellow Taxi Fare Prediction (Academic Project, [My Contributions](#) | [Full Project](#))

Large-scale predictive modeling using Apache Spark and LightGBM on 150M+ NYC taxi trip records.

- Analyzed 20GB+ trip data on SDSC supercomputer; engineered time/efficiency features, handled outliers
- Developed fare predictor (**MAE \$1.91, R<sup>2</sup> ≈ 0.94**) and tip classifier (**79% accuracy**)
- Achieved **36% RMSE improvement** vs baseline regression; earned **3rd place** in class competition

### Amazon Sports & Outdoor Products Recommender System (Academic Project, [Full Project](#))

Hybrid recommender system (SVD + Ridge) built from 4M+ reviews for top-10 recommendations.

- Processed 4M+ reviews and metadata; engineered user/item features, handled extreme sparsity (99.998%)
- Built weighted hybrid (0.6 SVD + 0.4 Ridge) achieving **31.5% RMSE improvement** over baseline
- Achieved nDCG@10 of 0.9981 for top-10 rankings, demonstrating near-optimal quality

## Skills

**Languages & Tools:** Python (Pandas, NumPy, Scikit-learn, Plotly, Matplotlib, Seaborn), SQL

(PostgreSQL, MySQL), D3.js, Tableau, Power BI, Git, JavaScript, Streamlit, Azure, AWS, Excel

**ML & Analytics:** Statistical Analysis, Regression, Classification, NLP, A/B Testing, Feature Engineering, Cross-Validation, Model Evaluation

**Data Engineering:** ETL, APIs, Spark, Dask, Data Pipelines

## Experience

### DBI Beverage

2014 - 2020

#### Lead AM Warehouse Associate

Stockton, CA

- Led team of 7 managing distribution of 50K+ cases/day for Coors, Modelo, and Corona brands
- Spearheaded new Warehouse Management Software (VIP EasyOps) implementation, partnering with vendors to modernize warehouse workflows
- Improved inventory accuracy 12% by analyzing operational data & implementing improvements
- Led warehouse expansion: designed floor layout from planning through implementation