Hudson Smith

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EDUCATION

University of California, Berkeley - B.A. in Applied Mathematics (Data Science Concentration)
Expected Graduation May 2026
Relevant Coursework: Probability Theory, Statistical Inference, Linear Algebra, Data Structure

PROJECTS

Donner Summit Road Closure Forecasting | Python

- Built a Python pipeline to create a supervised learning dataset for forecasting I-80 Donner Summit road closures using historical closure records and hourly weather data by parsing 3000 facebook posts.
- Standardized timestamps, converted closure and reopening posts into event intervals, and generated 6, 12, and 24-hour prediction labels.

Water Park Ticket Predictor | Python

- Extracted and structured daily sales data from a 2,600 page PDF and engineered weather and temporal features to forecast ticket demand.
- Compared scikit-learn linear regression with a PyTorch neural network; linear regression achieved lower test RMSE (37 vs. 180) and stronger generalization.

Build Your Own World (BYOW) | Java

- Built a 2D tile-based world generator in Java using object-oriented design, procedural generation, and seeded randomness.
- Implemented enemy pathfinding using BFS, along with rendering and input-handling systems.

Spam Email Filter

- Analyzed 8,000+ emails to identify text, HTML, and link patterns associated with spam.
- Trained a logistic regression classifier using engineered features and K-fold cross-validation.

WORK EXPERIENCE

City of Brentwood *April 2022 - August 2025*
Assistant Pool Manager

- Led biweekly training for 30+ staff members to improve teamwork and emergency response in high-stress situations.
- Monitored staffing and weather conditions on peak-demand days to support opening decisions and safe operations.

SKILLS

Languages: Python, Java, SQL
Tools & Software: IntelliJ IDEA, VS Code, Jupyter Notebook, MATLAB
Libraries: Pandas, NumPy, scikit-learn, Matplotlib, Seaborn, PyTorch
Data Visualization Tools: Tableau, Excel