

Alex Wang

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PROJECTS

NCAA Division I Sports Power Ratings

[Link](#)

- Developed and maintained power ratings for NCAA D1 Football and Basketball, with weekly football and daily basketball power ratings and game predictions since August 2025.
- Processing incomplete tabular football play-by-play data and detecting when such data has errors and/or is incomplete for a game
- Developed a model for "deserved margins," a modification of postgame win expectancy, which applies a modification to a football game's actual scoring margin to isolate factors more predictably correlated with winning.
- Adjusts efficiency ratings for strength of opponents to accommodate large networks of college sports teams using exponential smoothing in tandem with a modified Massey method.
- Accounts for preseason projections by regressing talent ratings from 247Sports as well as returning projection.
- Individual game projections account for factors such as altitude, stadium/arena capacity, and difference in days of rest for each team.
- For basketball, wrote code to clean ESPN's text-based play by play in order to track individual player possession counts.

CAVALIER Source Code Plagiarism Detector

[Link](#)

- Uses Abstract Syntax Trees and the tree-sitter module as well as the AHU hashing algorithm to analyze a program's structure and compare it to others in a corpus. Resistant to variable renaming.
- Also uses agglomerative clustering to identify groups of highly similar submissions.

EXPERIENCE

Research Intern, UCI Institute of Transportation Studies

Jun 2025 - Oct 2025

- Helped develop a method to identify week-to-week near-stationary states from the CalTrans PeMS dataset.
- Processed data from traffic sensor VDS 1203506; used the Pruned Exact Linear Time (PELT) algorithm with RBF kernels to conduct unsupervised segmentation of time series data.

Dev Team Instructor, Troy CyberPatriot

Aug 2025 - May 2026

- Instructor of the Cisco Networking course within the Troy High School CyberPatriot program.
- As a dev team member, developed slide decks, interactive labs, and curriculum to help students prepare for the CyberPatriot competition.

EDUCATION

2026 - Present University of California, Berkeley

- COMPSI 61A, MATH 55, ECON 2, PHILOS 2

SKILLS

Python (numpy, pandas, matplotlib), Java, C++, R (tidyverse), data cleaning and processing, web development (HTML, CSS, JavaScript), Cisco IOS/ASA networking