Maximo Babun

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Education

University of San Diego — San Diego, CA

B.S. Computer Science concentration on Data Science and AI, Minor Management — Aug. 2023 – May 2027
Trustee Scholarship and USD Grant — 3.90 — Dean's First Honors

Technical Skills

Languages: Java, Python, C/C++, JavaScript, HTML/CSS, SQL
Developer Tools: Git, VS Code, Cursor, IntelliJ, Linux/Bash, VIM, MySQL
Libraries/ Frameworks: Pandas, Matplotlib, JUnit, Mockito, Docker, Spring
Programming Concepts: Object Oriented Programming, Database Management, REST APIs

Projects

La Liga Match Outcome Predictor | *Python, Beautiful Soup, Requests, Pandas, Scikit-learn* — May 2025

- Wrote a **Python** scraper using libraries requests and BeautifulSoup to collect data from La Liga matches across multiple seasons.
- Cleaned and organized the data using Pandas, engineered features, and trained classification model with scikit-learn to predict future match results.
- Tuned the model and **evaluated performance** using cross-validation, achieving consistent predictive results and gaining insights into key match features influencing outcomes.

Valet Parking Simulator | *Java, JUnit, Gradle, Mockito* — April - May 2025

- **Collaborated** to develop an automated valet parking system designed to efficiently handle vehicle arrivals and departures, accounting for constraints such as vehicle size, EV charging requirements, and VIP reservations.
- Built a modular application using **Java**, implementing **object-oriented methodologies** including Strategy and Factory design patterns, and applied SOLID principles for clear separation of responsibilities, maintainability, and extendibility.
- Ensured software reliability by writing unit tests with JUnit and Mockito, automated the build and testing processes using Gradle, and achieved **85% test coverage** to minimize manual testing.

Command Interpreter Shell | *C* — April 2024

- Architected a Unix shell in **C** featuring dynamic memory allocation for command parsing with robust input tokenization and background process execution.
- Implemented comprehensive **signal handling** system for process control, enabling foreground process interruption and asynchronous background process monitoring.
- Engineered **process management** architecture with child process creation and collection to prevent zombie processes while tracking exit codes and termination signals.
- Developed built-in command functionality including directory navigation with environment variable integration and comprehensive error handling throughout the execution.

Experience

Lab Assistant and Tutor — February 2024 – Present

Shiley-Marcos School of Engineering — *San Diego, CA*

- Provide technical guidance to 100+ students in programming concepts, including data structures, algorithm analysis, and **debugging** in Python, Java, and C.
- Mentor students on **object-oriented programming**, functional programming, abstraction techniques, and low-level computing concepts such as memory organization and concurrency.
- Lead one-on-one and group tutoring sessions on **software development best practices** and **coding standards**, increasing student engagement and assignment quality while improving programming efficiency.

Organizations

Association for Computing Machinery (ACM) – Vice President, 2025–2026
Theta Tau – Professional Engineering Fraternity – Scribe, 2025
Society of Hispanic Professional Engineers (SHPE) - Active Member