

Parker Charles Cassar

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EDUCATION

- **University of California, Berkeley**
Computer and Data Science, B.A.

Berkeley, CA
Aug 2020 - Dec 2025

LANGUAGE EXPERTISE

- **Languages:** C/C++, Python, Java, Go, JavaScript (React, Typescript, Node.js, Next.js), SQL, Bash (Git), R, Pwsh

EXPERIENCE

- **Software Engineer**

Office of Animal Laboratory Center for UCB

Oct 2024 - Feb 2025

- **Performance Optimization:** Optimized SQL queries using Apache Spark for distributed data processing, and improved relational database structures, reducing overall processing time by 30% so far for 100+ researchers.
- **API Development:** Built secure RESTful APIs to handle data exchange between internal HR systems and the Cayuse platform, improving data accuracy and accessibility.
- **Automation:** Data validation and reporting processes automated using PowerShell scripts, reducing manual intervention and errors in the weekly bulk data back up.

- **Full-stack Developer**

Institute of Electrical and Electronics Engineers (IEEE) Berkeley Chapter

Feb 2022 - Jan 2025

- **Teamwork:** Lead a team of five members with weekly maintenance and assignment meetings.
- **Application Design:** Migrated website's front-end using TypeScript, React and Next.js from outdated Ghost platform and reduced page load time by 25%.
- **Back-end Infrastructure:** Modernized back-end, Node.js and MongoDB stack to track member attendance, office usage, and inventory supporting 100+ active users. Enhanced security with HTTPS/SSL protocols.

- **Machine Learning Intern**

Pikrex

Dec 2022 - Aug 2023

- **ML Engineering:** Developed PyTorch-based manga text detection and translation system achieving 92% accuracy, using Apache Spark to train on 1M+ samples and engineer 50+ performance-enhancing features.
- **Scalable Dev:** Developed Tesseract OCR (Optical Character Recognition) pipelines with Docker, reducing deployment time by 40% and scaling to handle up to 10,000 manga frames across various environments.
- **Natural Language Processing:** Trained machine learning models for text recognition with NLTK and spaCy, using AWS cloud resources to reduce processing time by 30% and improve accuracy to 92%, including extensive data preprocessing with Python's pandas.

- **Course Staff**

CS 70 Discrete Mathematics & Probability

May 2022 - Jan 2023

- **Staff TA:** Helped develop and teach discrete Mathematics and conditional probability curriculum for over 500 students and led a twenty-student discussion session.
- **Tutoring:** Assisted students through one-on-one weekly office hours with a focus on the coding portion of projects and homework assignments.

PROJECTS

- **AliExpress Web Scraper**

Robust Scraper for Tracking Prices and Sales of 1K+ Products

2024

- **High-Performance Scraping:** Engineered a highly efficient Python scraper capable of crawling and parsing over 20 pages per minute, minimizing latency.
- **Dynamic Page Handling:** Using Selenium to parse and extract data from JavaScript-rendered pages, enabling extraction of information from dynamic content.
- **Cloud-Native Architecture:** Deployed the web scraper on Google Cloud Platform (GCP) for real-time tracking of prices using load balancing to asynchronously check thousands of concurrent requests.

- **Gitlet - User version-control system**

File management mimicking Git

2023

- **File Management:** Independently implemented complex Git operations from scratch in Java, including init, add, checkout, status, log, reset, branch, merge, push, and pull.
- **Commit Graph Visualizer:** Constructed a custom ASCII commit command line visualizer to better understand your git log including the different branches and their commits.