

# Karmann Saini

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## EDUCATION

### University of California, Santa Cruz

Bachelor of Science in Computer Science

Expected June 2027

GPA: 4.0

## EXPERIENCE

### Intern

*California Department of Social Services (CDSS)*

- Author comprehensive documentation establishing data governance standards for departmental compliance.
- Optimize systems by implementing structured data entry protocols, ensuring integrity for state-level reporting.

### X-Ray Lab Engineer Intern

*Carl Zeiss X-ray Microscopy, Inc.*

- Engineered Python automation scripts to analyze semiconductor wafer defect data, increasing early defect detection accuracy by 23%.
- Architected a data-processing pipeline to consolidate weekly CSV reports, cutting manual aggregation time by 80% for the engineering team.
- Revamped Device History Record documentation by designing structured templates, reducing data retrieval latency by 40%.

### Project Manager Intern

*NASA*

- Led a team of 12 interns to model mission risks using Python simulations, reducing projected schedule variance by 15%.
- Applied systems engineering principles to align project constraints with scientific deliverables, ensuring on-time completion of milestones.
- Authored 180+ pages of Design Review content, establishing scheduling baselines adopted in subsequent engineering reviews.
- Presented technical findings to NASA engineers, earning a “Professional” rating and contributing to project approval for next-phase testing.

Sep. 2023 – Jan. 2024

Tempe, AZ

## PROJECTS

### Investment Portfolio Tracker | *React, Python, Flask, PostgreSQL, Firebase*

Jan. 2025

- Architected a full-stack personal finance dashboard to visualize real-time investment performance and asset allocation.
- Engineered a RESTful API using Flask and PostgreSQL for complex data aggregation, replacing legacy file-based storage.
- Integrated Firebase Authentication to secure multi-user sessions and enforce persistent data synchronization across devices.

### Plait | *JavaScript, Node.js, Express.js, Git*

Nov. 2025

- Developed a full-stack recipe discovery engine that uses algorithm-based filtering to generate results from user-inputted ingredients.
- Built a scalable Node.js/Express backend to serve the frontend architecture and manage API throughput for external recipe data.
- Implemented dynamic client-side rendering with JavaScript to achieve sub-second response times for recipe queries.

## TECHNICAL SKILLS

**Languages:** C/C++, Python, Java, JavaScript (ES6+), SQL, x86 Assembly

**Frameworks/Libraries:** React.js, Node.js, Express.js, Flask, PostgreSQL, JUnit, Vitest

**Developer Tools:** Git/GitHub, Linux (CLI), WSL, Docker, Visual Studio, Firebase, REST APIs

**Relevant Coursework:** Data Structures & Algorithms, Machine Learning, AI, Computer Architecture, System Design, Object-Oriented Programming (OOP), Probability & Statistics, Client-Server Architecture, Full-Stack Web Development