



Eric Zhu

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Education

University Of California, Berkeley

Expected Dec 2025

Bachelor of Science in Electrical Engineering and Computer Science

Berkeley, CA

- **Relevant Coursework:** Data Structures, Computer Architecture, Effective Algorithms, Database Systems, Optimization for Machine Learning, Computer Security, Machine Learning, Operating System

Experience

Kinovat

Sep 2024 – Dec 2024

Software Engineer Intern

Berkeley, CA

- Designed and deployed scalable web applications using **AWS EC2** and **Lightsail**, resulting in a **20%** reduction in server downtime and improved user experience.
- Integrated payment processing systems leveraging **Stripe API**, enabling secure and efficient transactions across the platform.
- Implemented mapping functionalities using **Google Maps API**, enhancing navigation features and improving user engagement by **15%**

City College of San Francisco

Aug 2022 – Dec 2022

Teaching Assistant

City, State

- Developed the course resource website using **MongoDB, React, Node.js and Flask**, improving student completion on homework by **15%**
- Analyzed program correctness of **40+** students' projects and coding assignments
- Provided students with approaches to programming questions in Python

Meta

Jul 2022 – Aug 2022

The Engineer of the Week Intern

City, State

- Designed and implemented a social application about ocean pollution that emphasize social implication and boost Meta's public image

Projects

RookieDB: an ACID-compliant relational Database Management System | *Java*

- Implemented **B+ Tree indexes**, resulting in a **40%** improvement in query response time for large datasets.
- Designed and integrated efficient join algorithms, optimizing the performance of relational queries by **30%**
- Applied **ARIES recovery protocol**, ensuring **100%** durability in crash recovery scenarios
- Enabled concurrent transactions with **multi-granularity resource locking**, supporting up to **50** simultaneous transactions with strong consistency and isolation.

ShopSphere: E-commerce platform | *React, Redux Toolkit, Node.js, Javascript, express.js, Tailwind, MongoDB*

- Implemented state management using Redux Toolkit, improving application performance and reducing data-fetching delays by **20%**.
- Integrated core features such as product management, order tracking, and user authentication, streamlining customer and admin operations.

Video Processing Acceleration Using Convolutions | *C, openMP, openMPI*

- Developed a high-performance video processing tool using 2D convolutions, capable of applying effects like Gaussian blur and sharpening on grayscale video frames
- Utilized **SIMD** (Single Instruction, Multiple Data) instructions and **multi-threads** to parallelize convolution operations with **9.5×** speedup
- Achieving **5.6×** speedups in processing large video datasets by implementing **multi-processes**, ranked top **25%** performance of the class

Technical Skills

Languages: Python, Java, C++/C, Javascript, SQL

Technologies: Django, Flask, Spring Boot, JUnit, Node.js, React.js, Express.js, Node.js, MongoDB

Concepts: Full Stack Development, Parallel Computing, Artificial intelligence, Machine Learning, Deep Neural Networks, Natural Language Processing, Computer Vision