

Ashley Zhou

ashleyzhou62@gmail.com | 404-234-6142 | ziyuzhou.me | San Francisco, CA

EXPERIENCE

Software Engineer, Column N.A. (Bank), San Francisco

Oct 2025 – Present

- Designed and built bulk ACH and check payment processing for up to 1M transfers per batch, with asynchronous execution, progress tracking, and per-transfer validation and error reporting. Reduced database overhead through batched writes and designed workflows to remain resilient through service interruptions while isolating individual payment failures.
- Led the design and implementation of Solana support for Column's stablecoin platform, extending an EVM-specific architecture to support multiple blockchain networks across wallet provisioning, payments, liquidity management, and reconciliation.
- Improved a treasury system allocating \$10B in customer deposits across partner banks to meet retained-deposit targets and provide expanded FDIC insurance coverage. Reworked balance timing and allocation logic to improve target accuracy and reduce avoidable overdrafts, built historical simulations to validate changes, and strengthened daily processing and monitoring.
- Designed and built a system to automate check payment disputes, such as incorrect amounts and duplicate charges. Translated complex adjustment rules into workflows that identify affected transactions, correct customer balances, and reconcile accounting records, with support for reversals and manual review of exceptions.

Software Engineer, Samsara Inc., San Francisco

Aug 2023 – Oct 2025

Previously Firmware Engineer Intern, May – Aug 2023

- Designed and built a configuration platform for 2M+ connected devices, reducing the time to introduce new device settings from a day to minutes. Decoupled firmware configuration from backend code changes through automatic schema generation, versioned storage, and device synchronization.
- Extended dash camera image capture to work when video recording is inactive, enabling camera calibration during installation. Improved delivery reliability for captured images by tracing and fixing failures across cloud services and device firmware, reducing transmission failures by 74%.
- Built cloud-to-vehicle audio messaging, allowing customers to send spoken alerts from the web or automated workflows. Implemented message orchestration, firmware integration, and web controls.

Software Engineer, Emory Nursing School, Atlanta

Feb 2022 – Aug 2023

- Built a healthcare research platform for nurses and researchers to explore de-identified clinical records, developing a Vue.js interface and optimizing MongoDB queries.
- Developed data ingestion and validation pipelines in Node.js and Python to prepare clinical datasets for research.

EDUCATION

Emory University, Atlanta, GA

May 2023

B.S. in Mathematics & B.S. in Computer Science, Highest Honors

GPA: 4.0/4.0

Honors: Trevor Evans Award; academic scholarship covering 50% of tuition.

PROJECTS

Constrained Directed Graph Clustering

Jun 2022 – May 2023

- Developed graph-clustering algorithms using matrix differential equations and functional optimization, extending constrained minimum-cut methods to broader clustering problems.

SKILLS

Languages: Go, Rust, Python, C++, TypeScript, SQL

Infrastructure & Data: AWS, Kubernetes, MySQL, Temporal, DynamoDB, MongoDB, Docker, Linux, gRPC