

# Zander(Xinhe) Xu

Mountain View, CA | zanderxu.uiucsd2025@gmail.com | (510) 279-6817

## Professional Experience

### Intuit

01/2024 – Present

*Software Engineer – Fintech Payments team*

- Architected a distributed reconciliation system to process 2M+ daily financial transactions, utilizing **Kafka** with custom key-based partitioning to ensure sequential processing by merchant.
- Engineered fault-tolerant data ingestion with idempotent **AWS Lambda** consumers, implementing exponential backoff retries and a Dead-Letter Queue (DLQ) for robust poison message handling.
- Optimized data storage and analytics using **S3 Parquet** columnar format with date-hour partitioning, reducing analytical query latency from 45s to 2s and enabling real-time financial reporting across multiple data centers.
- Designed enterprise RBAC system using **OPA/Rego** for microservices authorization, implementing 200+ permission policies across 15 services with centralized distribution via **Redis** cache and auto validation pipeline, reducing authorization latency from 50ms to 5ms.
- Built end-to-end Payment AI Agent using **LLM APIs** with **React/TypeScript** frontend and **Python FastAPI** backend, implementing real-time screenshot analysis, contextual invoice generation with validation pipelines, and A/B testing framework via **Amplitude**.
- Optimized high-traffic payment UI architecture using **React** virtualization with **react-window**, implementing progressive loading for 100K+ transaction records, lazy component hydration, and comprehensive E2E testing via **Playwright** reducing page load time by 60%.

### University of Illinois Urbana-Champaign

08/2022 – 12/2023

*Research Assistant (software development) – INCAS/ MIPS Data Platform Development*

- Led development of a large-scale social media intelligence platform to identify and track misinformation campaigns, processing 100K+ daily records using **Selenium/Python**, **Redis**, and **Docker** ML orchestration.
- Pioneered novel **Belief Embedding Model** integrating **BERT**, **VGAE**, and **Segment Trees** for misinformation detection, achieving breakthrough performance on social network analysis benchmarks.
- Built **React**-based analytics platform with 3D/2D network visualizations serving 50+ researchers, implementing automated evaluation frameworks and enabling 15+ published papers across multiple institutions.
- Designed production-grade ML infrastructure with continuous retraining, A/B testing, and real-time classification workflows, supporting research collaborations and cross-platform misinformation analysis.

### Intuit

05/2023 – 08/2023

*Software Development Engineer Intern – QuickBooks Money Team*

- Developed **React**-based deposit list and tracker with advanced data filtering, sorting, and CSV download functionality using **MySQL** backend, processing 5K+ daily deposit records and improving user satisfaction scores by 15%.
- Implemented deposit management feature using **Spring Boot** with **RESTful APIs** for status updates, added input validation and auto email notifications for status changes, reducing failure rates by 25% and improving search performance through database indexing.

### Amazon

02/2022 – 08/2022

*Software Development Engineer Intern – Customer Search Recommendations Team*

- Implemented **Redis** caching layer for product catalog queries to reduce **DynamoDB** load from 8K+ QPS, using TTL-based expiration and achieving 92% cache hit ratio, reducing search latency from 300ms to 80ms.
- Built cache invalidation system using **DynamoDB Streams** and **Java** to automatically evict stale product data when catalog updates occur, maintaining cache consistency across frequent product changes.
- Developed **CloudWatch** monitoring dashboard to track cache performance metrics and automated alerts for cache degradation, improving incident response efficiency.

## Technical Skills

**Programming Language:** Python, JavaScript/TypeScript, Java, C, C++, Go, Swift

**Frameworks & Infra:** React, React Native, FastAPI, Spring Boot, Kafka, Hadoop, Docker, Kubernetes, AWS

**Databases:** Redis, DynamoDB, MongoDB, MySQL, PostgreSQL, Spark/PySpark/SparkSQL

**Other Tech Skills:** TensorFlow, BERT, Hugging Face Transformers, PyTorch, Graph Neural Networks (VGAE), NLP, LLM, OPA/Rego policy frameworks, RBAC systems, Selenium, Playwright, JUnit, TestNG

## Education

### University of Illinois at Urbana-Champaign

Urbana, IL

• **Master of Computer Science**, GPA: 3.90/4.00

08/2022 – 12/2023

• **Bachelor of Science in Statistics & Computer Science**, GPA: 3.88/4.00

08/2018 – 05/2021