

James Xu

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Education

University of Illinois Urbana-Champaign

B.S. Computer Science, *The Grainger College of Engineering*

Champaign, IL

Expected Aug 2026

Experience

Stackline

Software Engineer I

Seattle, WA

Jun 2024 - Dec 2025

- Led the end-to-end design and development of a production omni-channel advertising management platform built from scratch (Next.js, Apache Doris, DynamoDB, AWS ECS), replacing a legacy system and delivering a 10× faster dashboard with 2–3× faster analytical workflows.
- Architected a cloud-native analytics platform using Amazon S3 and Apache Doris with materialized views, enabling high-performance reporting for 200+ brands (83 of top 100), reducing query latency by 40% and cloud costs by 30%.
- Designed and owned the data ingestion and orchestration pipeline, integrating Amazon, Target, Walmart, Instacart, and Criteo APIs for reporting and campaign management with OAuth, rate limiting, retries, and EventBridge-scheduled batch jobs on ECS.
- Deployed a production Model Context Protocol (MCP) server over Apache Doris analytics infrastructure, enabling AI-driven querying and contextual reporting across omni-channel advertising datasets while leveraging materialized views and workload-aware query routing for low-latency performance.
- Productionized the platform with AWS ECS deployments, Route 53 configuration, and comprehensive observability via CloudWatch and Grafana, ensuring reliability across scheduled ingestion and campaign operations.
- Developed a JavaScript-based fingerprinting library deployed on AWS ECS, generating over 12M records and 100 GB of data to enhance automated agent intelligence.
- Engineered a custom Chromium-based browser in C++ by integrating analytics from fingerprinting tools and reverse-engineered anti-bot metrics, improving system robustness and performance.

Amazon

Software Engineer Intern

Austin, TX

May 2025 - Jul 2025

- Designed and launched a full-stack React web application to streamline configuration migration by mapping internal APIs, improving system interoperability and reducing migration time.
- Developed a Java-based API to process 500 GB of logs daily with optimized CPU usage, caching critical data in DynamoDB for real-time access and analytics.

SoKat

AI/ML Engineer Intern

Baltimore, MD

May 2022 - Sep 2022

- Developed PyTorch-based computer vision and NLP models to analyze emotional sentiment, enhancing user experience in mental health applications, securing a \$250,000 grant from the U.S. Government.
- Ensured AI/ML solutions complied with stringent security and privacy standards for classified government environments, maintaining 100% regulatory adherence.

Projects

- Built and deployed a competition trading exchange used by 150 competitors at 15,000 operations/s, with a Rust engine using dedicated per-market threads, engine-local O(1) exposure-based risk checks, sequenced/batched WebSocket market data, and async batched PostgreSQL recovery; added Go load harnesses for REST, WebSocket, and mixed traffic, and shipped a Next.js client behind an AWS ALB split across ECS/Fargate and EC2.

Skills

Languages/Libraries: Typescript, React, Python, C++, NodeJS, Java, Golang, PyTorch, Keras, scikit-learn, pandas, NumPy, SQL, WebKit, Chromium, HTML, CSS

Development Tools: AWS, Figma, Linux, Git, Agile Development, Chrome Devtools, Yarn, npm, Docker, Jira, Confluence, CI/CD Pipelines