

Tanmay Singh

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EXPERIENCE

Fern

Aug 2025 – Present

Software Engineer

New York, NY

- Designed and shipped Fern Replay end-to-end — a customization persistence system using 3-way merge and conflict detection that preserves customer SDK modifications across automated regenerations, onboarding enterprise customers including Hume AI and Smallest AI.
- Owned the Java SDK generator (158 merged PRs), building WebSocket support with reconnection/queuing, SSE streaming, OAuth flows, and wire testing — bringing Java to feature parity and serving 23 enterprise customers including Bloomberg, Auth0, and Intuit.
- Resolved production infrastructure incidents by diagnosing OOM crashes via heap dump analysis (13K leaked objects consuming 93% of heap), implementing EC2-to-Fargate automatic failover, and adding ZIP64 support for SDKs exceeding 2 GiB across 3 system layers.
- Shipped 250 merged PRs in 8 months across 7 language generators (Java, TypeScript, Python, Swift, Go, OpenAPI, CLI) by establishing efficient cross-language workflows and leveraging AI coding agents for routine changes.

Amazon

Sept 2022 – July 2025

SDE 1 → SDE 2 (Identity Services)

Austin, TX

- Designed a cross-platform JavaScript bridge for Passkey authentication, enabling seamless enrollment for 250M+ users and increasing mobile adoption to 71%. Featured in The Verge.
- Developed and standardized native integrations for iOS, Android, and Web, reducing authentication inconsistencies and improving security by enforcing hardware-backed key storage.
- Architected a phased migration of a high-throughput authentication system (3.1B requests/day) from monolith to microservices, leveraging AWS Lambda and DynamoDB — reducing deployment cycle time and improving fault isolation across authentication services.
- Replaced legacy cookie-based session management with an AWS KMS-backed key storage system, eliminating session hijacking vectors across all client platforms (iOS, Android, Web).
- Managed Android portion of a large-scale service migration with a robust fallback mechanism, ensuring uninterrupted authentication for 33.7M requests.
- Directed Amazon Halo PIN rollout integrating mobile SDK and backend for multi-actor updates (50M users).

Amazon

May 2021 – Aug 2021

Software Engineering Intern (Last Mile)

Austin, TX

- Optimized mobile event delivery pipeline by implementing an asynchronous message bus with SQS queues, reducing event drop rate by 23% and improving data consistency.
- Conducted A/B testing, resulting in a 20% reduction in missed message drop rate.

Crestron Electronics

May 2019 – Aug 2019

Software Engineering Intern

Plano, TX

- Built a WebUI dashboard and RESTful API to automate internal phone system management, increasing clock-in accuracy by 56%.

PROJECTS

tanmay-singh.com | *Next.js 15, React 19, TypeScript, Tailwind CSS 4, Supabase*

2025

- Built a full-stack portfolio with 23 browser-based games, a blog platform with HMAC-authenticated admin, and live GitHub activity integration. Deployed on Vercel with ISR caching.

TECHNICAL SKILLS

Languages: Java, TypeScript, Python, Go, Swift, JavaScript

Technologies: React, Next.js, AWS (ECS, Fargate, Lambda, DynamoDB, CloudWatch, S3), REST APIs, OAuth, WebSocket, gRPC, Supabase, PostgreSQL, Docker, Git, CI/CD

EDUCATION

University of Texas At Austin

Austin, TX

Bachelor of Arts in Computer Science, Minor in Business

May 2022