Alex Yan

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Education

Purdue University — West Lafayette, IN
B.S. Computer Science — *May 2028*

- **Relevant Coursework:** Data Structures & Algorithms, Object-Oriented Programming, Systems Programming, Computer Architecture, Programming in C, Discrete Mathematics, Linear Algebra, Introduction to Statistics

Experience

Shopify — New York, NY
Software Engineer Intern — *Sep. 2026 – Present*

- Own the EU rollout of Plaid bank-account linking for merchant payouts, replacing manual IBAN entry with bank-verified accounts in Ruby on Rails services behind per-country feature flags; launched **5 countries**, where **8,700+ merchants** linked accounts in the first month (**87%** of them new) and processed **$4.7M+** in payment volume.
- Diagnosed a production bug in bank-account verification for merchants who linked several accounts at once, traced it to accounts being paired with the wrong bank details, and worked with **Plaid** on a configuration change, dropping daily verification failures by **78%**.
- Built bank-account ownership verification and its support tooling with Ruby on Rails, GraphQL and TypeScript: a status view and a document-upload workflow in the internal support tool that reuse merchant verification checks and audit-log every upload with its actor and outcome.
- Traced a **2×** jump in production errors on bank-account saves to a new security-challenge rollout that logged every challenged merchant as a failure, leading to a fix that cut falsely logged errors by **99%** and made error monitoring accurate again.
- Made multi-step verification updates atomic with database transactions, and hardened sensitive-data handling with sanitized error paths and a reusable masking module that keeps account details out of logs.

PNC Bank — Pittsburgh, PA
Software Engineer Intern — *Jun. 2026 – Aug. 2026*

- Delivered Spring Boot validation features in Java for loan origination workflows on the application entry REST API, deployed through Red Hat OpenShift.
- Expanded JUnit coverage for validation logic and verified edge cases end-to-end with Postman against MongoDB-backed configuration; fixed intermittent Jenkins CI failures caused by race conditions in asynchronous tests.
- Built an LLM agent that catches convention and coverage gaps in unit tests before PR submission, grounded in team testing patterns and design discussion to cut PRs needed for approval by **55**%.

Purdue Stack — West Lafayette, IN
Full Stack Developer — *Sep. 2025 – May 2026*

- Shipped a research collaboration platform in Next.js, FastAPI, and PostgreSQL for Purdue's Statistics Department, featuring role-based dashboards, real-time messaging, and JWT authentication. (Spring 2026)
- Cut TA scheduling setup time **25%** with a preference-weighted greedy matching algorithm in Python, powering an assignment system for 150–200 TAs per semester in Purdue's Mathematics Department. (Fall 2025)

Rooh (Berkeley SkyDeck Pad-13 Incubator) — Berkeley, CA (Remote)
Software Engineer Intern — *Jun. 2025 – Dec. 2025*

- Cut voice response latency **20%** by parallelizing TTS and agent prompting ahead of STT in a Google Cloud STT → LLM → TTS pipeline for a real-time conversational AI app in React and Next.js.
- Architected Next.js backend data pipelines supporting a live AI simulator and async review tool, handling real-time audio streaming, buffering, and transcription at scale.

Projects

Raft Consensus Implementation (MIT 6.5840: Distributed Systems) | *Go, RPC, Concurrency* | Github — Oct. 2026

- Implemented Raft consensus in Go: randomized-timeout leader election, log replication, and crash-durable state, keeping replicas' state machines identical under network partitions, dropped messages, and restarts.
- Handled concurrent RPC state with term-guarded replies and log backtracking, passing all tests under Go's race detector.

Perch | *Electron, TypeScript, React, SQLite, OpenAI API, WebSockets* | Github — Jul. 2026

- Built a local-first desktop focus app that generates a personalized AI mascot from a user's photo and delivers real-time nudges on off-task activity, tracking native window state and browser events via a paired Chrome extension.
- Designed a tiered classifier escalating ambiguous states to OpenAI vision, with validated output and static fallbacks.

Skills

Languages: Python, Java, TypeScript, Go, SQL, JavaScript, C++, Ruby, C, Bash
Frameworks & Libraries: Spring Boot, React, Ruby on Rails, Node.js, Next.js, FastAPI, Flask
Systems & Protocols: REST APIs, Distributed Systems, Concurrency, GraphQL, RPC, CI/CD
Databases & Infrastructure: PostgreSQL, AWS (Lambda, API Gateway), Docker, MongoDB, Google Cloud, SQLite, OpenShift
Tools & Testing: Git, JUnit, GitHub Actions, Jenkins, Postman, Claude Code, GitHub Copilot, Cursor