

Yuchen (Sylvie) Zhang

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Professional Experience

Vercel (AI Gateway team)

San Francisco, CA

Software Engineer Intern

Jan 2026 – Apr 2026

- Engineered traffic routing to migrate ~7% of Anthropic model requests to new provider, implementing phased rollout, smoke test validation, and rollback plan; later scaled to secondary provider, handling 2x original volume
- Resolved connection resets in proxy's AWS ElastiCache layer caused by rapid scaling events by setting minimum compute thresholds to maintain stable connections
- Designed storage architecture for a competitive pricing review tool including database selection, schema design, and local persistence; tool identified stale or uncompetitive pricing across ~4% of model instances
- Launched tiered pricing and MSRP pricing capabilities, including DynamoDB schema extensions and API design
- Engineered token usage-based billing logic (5 providers, 2 features) for a system normalizing varying pricing models across ~40 providers and processing billions of tokens daily
- Extended observability infrastructure for new pricing capabilities via Terraform
- Integrated two LLM providers (Amazon Bedrock, Alibaba) into proxy and built Alibaba provider library for AI SDK from scratch, enabling features such as streaming, cache control, and reasoning

Patreon

San Francisco, CA

Software Engineer Intern

May 2025 – Aug 2025

- Optimized Redis cache invalidation logic to improve feed performance, reducing network calls / session to one
- Designed and implemented MySQL schema migration for a new bookmarks feature, including index design and storage tradeoff analysis (NoSQL vs SQL) at 18M MAU scale
- Engineered API endpoints including pagination and filtering logic for bookmarks feature (Python, SQLAlchemy)
- Drove A/B experiment-based feature deployment, achieving +2.3% media engagement and +0.9% post views
- Built bookmarks page on Android with local database persistence and optimistic updates for 2.7M monthly users
- Led two internal testing sessions and technical documentation to solicit feedback from engineering and product

Aware (women's community app, early startup)

New York, NY

Software Engineer Intern

Sep 2024 – Dec 2024

- Architected async notification system from scratch on AWS using SQS and Lambda functions, replacing single-Lambda synchronous processing and consolidating 3 producer utility layers into a shared layer
- Provisioned VPC, subnets, and associated networking infrastructure to enable notification system deployment
- Migrated service credentials and configuration to AWS Secrets Manager, including IAM setup and backend integration, establishing it as the team's standard for secrets management
- Designed and implemented new Postgres schema to support notification delivery and engagement tracking
- Integrated with third-party notification provider to enable engagement insights, delivery logging, and error handling

Technical Skills

- **Languages:** Java, Python, Go, TypeScript, C, SQL
- **Backend:** MySQL, MongoDB, Redis, API Design
- **Cloud / Infra:** AWS (SQS, RDS, VPC, EC2, Lambda, CloudFormation, IAM)
- **Other:** Docker, Terraform, Claude Code

Personal Projects

PetFriendly (website to find pet-friendly places)

Jun 2025 – Sep 2025

- Architected AWS serverless infrastructure as code, including API routing, database design, and async queue for review submission (RDS, Lambda, API Gateway, VPC/subnets, CloudFormation)
- Designed and implemented data pipeline using Python and Gemini SDK to analyze sentiment and relevance of 8,000+ reviews, with batching, retry logic, rate limiting, and local fault tolerance for failed batches

TasksPlanner (published on iOS & Android)

Mar 2024 – Jul 2024

- Designed MongoDB schema and API layer for the cross-platform app, managing full development lifecycle from implementation to publication on app stores (50+ downloads)

Education

University of Pennsylvania

Expected May 2026

Master of Computer and Information Technology (Computer Science)

GPA: 3.9

New York University

Bachelor of Science in Media, Culture, and Communication

GPA: 3.9