

# RAHUL DATTA

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## EDUCATION

### Santa Clara University

Santa Clara, CA

B.S. in Computer Science, Minors in Mathematics & AI

Expected, Jun 2027

- **Coursework:** Data Structures & Algorithms, Object Oriented Programming (C++), Multivariable Calculus, Statistics, Discrete Math
- **Involvements:** President, Math and Computer Science Society; Alpha Kappa Psi; Chess Club; South Asian Community; ACM

## PROFESSIONAL EXPERIENCE

### MathGPT (10M+ users) | [math-gpt.org](https://math-gpt.org)

San Francisco, CA

Software Engineering Intern

Apr 2025 – Jun 2025

- Architected an LLM-driven Practice Test engine with Next.js serverless API routes, OpenAI tool calls, Supabase (PostgreSQL), and Mixpanel Analytics that streamed 850K+ questions to 40K+ users in 30 days and increased average session length by 34%
- Implemented a streak-based engagement engine using Supabase Realtime, Next.js cron jobs, Loops.so email API, and Clerk Auth, automating personalized reminders and lifting seven-day retention from 11% to 18% among 150K+ active users
- Optimized OpenAI function-call pipeline on Vercel Edge by enhancing Qdrant vector search and refining backend pipelines with deterministic ordering and atomic writes, resolving chat race conditions and reducing latency by 30% and overall error rate by 20%

### Santa Clara Sports Performance

Santa Clara, CA

Data Science Intern

Jan 2025 – Apr 2025

- Automated the extraction and transformation from 2.5M+ rows of Catapult GPS tracking data from men's and women's D1 soccer teams to generate actionable risk scores, enabling coaches to identify high-risk moments and proactively adjust training intensity
- Developed and refined machine learning models to analyze physiological and biomechanical data (velocity, acceleration, player load, metabolic power) for real-time injury risk prediction using Pandas, NumPy, and scikit-learn
- Collaborated with Sports Science Directors and Dr. Smita Ghosh to translate model insights into practical coaching recommendations, supporting data-driven decisions that optimize athlete health and performance

### Milio | [milio.shop](https://milio.shop)

Santa Clara, CA

Software Engineering Intern

Dec 2024 – Mar 2025

- Spearheaded the engineering and architecture of a modern e-commerce platform for collectibles, leveraging Next.js, React, TailwindCSS, Supabase, and Stripe for seamless product management, authentication, and payments
- Established robust local and cloud development workflows with Bun, Docker, and Vercel, and implemented automated database migrations and type generation to ensure data integrity and developer velocity, reducing manual CI/CD pipeline runtime by 40%
- Integrated secure Stripe Checkout and webhook handling, enabling real-time subscription management

## PROJECTS & HACKATHONS

### Haggle - xAI 2025 Winner (300+ teams) | [Source Code](#)

Palo Alto, CA

- Architected an autonomous agentic voice negotiation system using FastAPI, Twilio, and Grok LLM that conducts real-time rate negotiations with service providers, integrated with a Next.js and Supabase backend, winning 1st for Voice at xAI Hackathon 2025
- Engineered a low-latency voice pipeline by integrating Grok Realtime API with custom Mu-law/PCM audio transcoding, enabling natural, interruptible conversations with sub-500ms response times indistinguishable from human latency
- Built a real-time "Call Console" dashboard using WebSockets and React that visualizes live negotiation states, provider queues, and call outcomes, providing users with granular observability into the autonomous agent's decision-making logic and state transitions

### Imaginary Ticketing (25K+ users) | [Source Code](#)

Remote

- Developed and maintained a scalable Discord ticketing bot in Python, leveraging Discord.py, Flask, SQL, and async libraries to streamline support workflow for large online communities, amassing 25,000+ users across multiple servers
- Designed an async modular architecture, reducing ticket response latency by 30% and enabling seamless integration of new features
- Implemented a CI/CD pipeline to orchestrate deployments with PM2, ensuring 99.999% uptime and zero-downtime updates

### Sheltr - Hack for Humanity 2025 Winner (200+ teams) | [Source Code](#)

Santa Clara, CA

- Architected and launched a web app that connects disaster victims with verified nearby shelters, featuring real-time filtering, reservations, and queue management powered by Google Maps APIs, winning Best Freshman Hack at SCU's Hack for Humanity 2025
- Integrated FastAPI backend with AWS DynamoDB/Bedrock, deployed on EC2 with Nginx, ensuring secure data processing and auth

## SKILLS & INTERESTS

**Languages & Frameworks:** TypeScript, Node.js, Express.js, React.js, Next.js, Python, Flask, PyTorch, C++, SQL, Bash

**Technologies:** PostgreSQL, Linux, Git, Docker, Supabase, AWS (EC2, DynamoDB, S3), Pandas, NumPy, GitHub Actions

**Certifications:** ML Specialization (Stanford) - regression, classification, neural networks, decision trees, clustering, RL, model evaluation

**Interests:** Coffee Art, Western Philosophy, Chess, Vinyasa Yoga, Table Tennis