RAHUL TANGSALI

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TECHNICAL SKILLS

C++, TypeScript, JavaScript, Python, Swift, SQL, React, Next.js, Angular, React Native, React Native Web, SwiftUI, Tailwind, ShadCn, Bootstrap, Radix UI, Redux Toolkit, Zustand, Node.js, Express.js, Flask, Tensorflow, Pytorch, GraphQL, Socket.io, Jest, Cypress, JMeter, Postman, PostgreSQL, MongoDB, MySQL, SQLite, DynamoDB, Prisma, Sequelize, Docker, Inngest, Firebase, Supabase, AWS Amplify, Google Cloud, Wordpress, Cursor, Windsurf

WORK EXPERIENCE

Sumeru Inc.   Los Angeles, CA
Full Stack Developer Intern   01/2025 - 05/2025 **(4 Months)**
- Delivered a unified Next.js front-end with a Node.js + Sequelize/MySQL back-end for Jyoti's Vastu Academy (25K+ monthly active users), providing a seamless mobile–web experience.
- Drove the PHP/React → Node.js/Next.js migration, boosting performance and scalability, deployed on AWS with RDS.
- Instituted automated test suites using Jest & Cypress, JMeter load, Postman functional—to catch regressions and performance bottlenecks before release.

Sara Technology Inc.   Los Angeles, CA
Software Engineer Intern   05/2024 - 12/2024 **(7 Months)**
- Architected animated practice flows in React Native, integrating audio playback and yielding faster page transitions while piloting in 3 schools and 5 speech-therapy clinics within 2 months.
- Built a secure AWS Amplify–powered GraphQL backend and developed authentication and ML-driven onboarding pipelines, accelerating logins while enhancing therapy accuracy and user engagement.
- Revamped the React website end-to-end, supporting an AI speech-therapy platform that won a 1st-place Columbia School grant.

iMocha   Pune, India
Software Engineering Intern   01/2022 – 12/2022 **(12 Months)**
- Built ML-driven, real-time interview-assessment system using Azure to score spoken answers, modernizing candidate evaluation.
- Refactored the NLP company stack from LUIS to Azure CLU, tripling intent-detection accuracy and enabling seamless scale-out.
- Delivered a responsive Angular and Node.js web app in 3 months, accelerating feature delivery and elevating user experience.

EDUCATION

University of Southern California   Los Angeles, CA
Masters in Computer Science (GPA: 3.68/4)   08/2023 - 05/2025
Pune Institute of Computer Technology   Pune, India
Bachelors in Computer Engineering (GPA: 9.36/10)   08/2019 - 06/2023

PROJECTS

PostCard: HyperLogLog Integration for PostgreSQL   *C, PostgreSQL Internals, HyperLogLog, Query Optimization*
- Built HLL_JOIN, a HyperLogLog-based estimator in PostgreSQL's planner and executor, which slashes memory use by 90%, keeps errors under 0.5% on joins of up to 500K rows, and speeds up multi-table planning by 4×.
- Enhanced PostgreSQL internals—parser, data structures, and execution engine—to support 16-bit HLL sketches with a 64 KB limit, and authored a suite of over 1,000 unit, integration, and performance tests to validate scale to 50 million rows.
- Link to view project: https://github.com/rahuul2001/PostCARD

PostgreSQL Buffer Management Policy Modification   *C, PostgreSQL 16.4, Docker, gdb, VS Code*
- Added a FIFO page replacement option to PostgreSQL 16.4's C source, packaged in Docker for clean testing, and implemented a debug flag to switch between FIFO and the default clock-sweep policy at runtime.
- Ran benchmarks across different workloads, used gdb and VS Code to trace and fix eviction logic issues, and tuned the code to lower read latency by 10%.

Self-Hosted AI Text-to-Speech & Voice Conversion Platform   *Python, Next.js, AWS, Inngest, FastAPI, Docker, StyleTTS2*
- Containerized and deployed three AI microservices—text-to-speech (StyleTTS2), voice conversion (SeedVC) and sound-effect generation—via Docker Compose on GPU-powered AWS EC2, fine-tuning models on 10–15 min of custom audio and using Inngest to queue and throttle requests.
- Developed a secure full-stack solution with a Next.js frontend, Node.js proxy and FastAPI backends, integrating S3 pre-signed URLs, AWS IAM roles for model uploads/downloads, and a credits-based workflow.

AI-Powered Personal Finance Platform   *Next.js, Radix UI, Prisma, PostgreSQL, Clerk, Inngest, Gemini API, Recharts*
- Built a dynamic, mobile-responsive Next.js dashboard with Radix UI and Clerk auth, delivering personalized, AI-driven finance insights and automated monthly reports via Gemini API and Inngest cron jobs for recurring transactions and budget alerts.
- Implemented an ML-powered receipt scanner for seamless expense capture, integrated Prisma ORM with PostgreSQL for reliable data storage, and visualized spending trends through interactive Recharts charts.
- Link to view project: https://ai-finance-manager-qlaq.vercel.app/