

Chaitanya Sanapala

Software Engineer

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SUMMARY

Software Engineer with experience in backend development, SaaS quality engineering and AI systems. Builds reliable cloud workflows and automation frameworks, combining application and database knowledge to uncover failure scenarios. Hands-on experience with TypeScript, Playwright, GCP, Vertex AI/Gemini, API testing and LLM-based agents.

EXPERIENCE

IronRod Health | Software Engineer

Bengaluru, India | February 2025 - Present

- Built a PDF extraction pipeline entirely on GCP using Gemini through Vertex AI and Google Cloud Functions. Migrated from direct HTTP triggering to queue-based processing with Cloud Tasks, resolving failures under high traffic.
- Refined extraction prompts and built a lightweight validation harness with structured response schemas, Zod validation and up to three retries for invalid responses; implemented secure webhook integrations with categorized retries.
- Contributed architectural recommendations that helped reduce a microservice's latency to approximately one-fifth of its previous level. Implemented retry logic across three microservices.
- Contributed to schema and configuration-storage design, accounting for existing application constraints and autocomplete requirements to support scalable retrieval.
- Built a Playwright automation framework in TypeScript from scratch, replacing Puppeteer and improving test reliability, maintainability and coverage.
- Performed API testing using Postman, WebSocket testing, and manual functional, regression, sanity and smoke testing for a configuration-driven SaaS application.
- Used detailed knowledge of denormalized schemas, data retrieval and transformation flows to identify failure scenarios, develop targeted test cases and uncover functional gaps.
- Identified migration defects where regenerated UUIDs left dependent tables referencing outdated records, highlighting the need to clear affected dependent data during migration.
- Identified repeated loading states triggered by incoming WebSocket events and recommended background UI updates to prevent disruption as event volume increased.
- Owned feature-release validation and acceptance-criteria reviews, approved feature readiness for production, and implemented targeted development fixes. Converted functionality gaps into Jira requirements, bug reports and UAT documentation.

Technologies: TypeScript, Playwright, Postman, Google Cloud Functions, Cloud Tasks, Vertex AI, Gemini, Zod, Allure, Jira

Cognizant | Programmer Analyst

Hyderabad, India | August 2022 - January 2025

- Automated functional, regression and API tests using Java, Selenium, RestAssured and TestNG, reducing manual testing effort and improving reliability.
- Led feature testing across QA, staging and production environments; maintained a Requirement Traceability Matrix to track coverage and validate business requirements.
- Integrated smoke and regression suites into Jenkins CI/CD pipelines. Identified critical business logic defects and collaborated with developers on resolution.
- Generated detailed test reports and contributed to retrospectives and root cause analysis to improve release quality and team efficiency.

PROJECTS

Rendro - Documentation Hosting Platform

- Built CLI-driven HTML documentation publishing with Cloudflare Workers/R2 and Convex-backed comments and authentication, including a lazy VS Code-style sidebar tree and CI/CD-native uploads.
- Implemented hash-based diffing, API-key organization isolation, lazy tree loading, dark mode and soft-delete behavior.

Technologies: Hono, Convex, Cloudflare Workers, R2

Zace - CLI Coding Agent

- Architected a model-agnostic CLI coding agent using Bun and TypeScript with a planner-executor runtime to turn developer intent into structured execution.
- Built context and memory pipelines for execution state, session history, tool outputs and cached summaries. Implemented Zod-validated tool schemas, permission safeguards and controlled side-effect boundaries.

Technologies: Bun, TypeScript, Python, Zod, JSON-RPC, LSP, UV

Zevium - API Marketplace

- Built backend systems, migrated payment flows from Autumn to Polar, and implemented credit-based usage and secure billing integrations.
- Addressed a high write-to-read workload by recording transactions in Redis and batch-persisting to SQLite through Cloudflare Worker Cron jobs for cost-efficient serverless operation.

Technologies: TanStack Start, TypeScript, Cloudflare Workers, Redis, SQLite

EDUCATION

B.E. / B.Tech, Mechanical Engineering

Chaitanya Bharathi Institute of Technology, Hyderabad | 2018 - 2022