

Paritosh Singh

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[GitHub](#) | [LinkedIn](#) | [Portfolio](#)

Computer science undergraduate (B.Tech, Data Science, CGPA 8.78) with hands on experience building backend systems, automation tooling, and machine learning platforms in C++, Python, and JavaScript. Code shipped includes merged pull requests to production open source projects and an internal test automation pipeline used daily at HealthEdge.

Experience

SDET Intern

Jun 2026 to Dec 2026

HealthEdge

Bangalore, India

- Automated and merged over 150 test scripts across multiple suites in a 150MB codebase, taking ownership of testing across the full development lifecycle and working with developers and QA to resolve undocumented failures.
- Designed a multi agent workflow on Claude Code that splits test analysis, generation, fixing, and auditing across specialized agents, nearly doubling daily regression analysis output and raising automated script output two to three times over.
- Built a Retrieval Augmented Generation (RAG) knowledge base from nine megabytes of locators, keywords, test cases, and failure signatures, using a grounding and citation rule that cut ungrounded AI generated fixes to nearly zero, after comparing RAG against fine tuning on accuracy and cost.
- Created a 15 signature, 7 category failure classification system paired with a browser based validation layer in Playwright and headless Katalon, so every AI generated fix is checked against the live app before it reaches production.

Projects

mini-redis | C++, POSIX Sockets, TCP/IP, RESP, epoll, Linux | [GitHub](#)

Feb 2026 to Mar 2026

- Wrote a TCP socket layer, a custom RESP wire protocol parser, and a command dispatcher for PING, ECHO, SET, GET, and DEL entirely in C++ with zero third party dependencies, sustaining over 1000 commands per second under concurrent load.
- Built an O(1) key value store on std::unordered_map with TTL expiry through std::chrono and a non blocking epoll event loop for event driven I/O on Linux, applying complexity aware design throughout.

TeamPulse | Node.js, Express, MongoDB, Socket.io, Redis, Bull, React, JWT | [GitHub](#)

Mar 2026 to May 2026

- Built a real time, multi tiered team collaboration platform similar to Slack on Node.js, Express, and MongoDB, exposing over 70 REST endpoints across 18 route modules with 15 Socket.io event handlers powering live messaging and presence at scale.
- Implemented role based access control for Admin, Member, and Guest users, JWT authentication with Google OAuth and email OTP verification, and a distributed Redis and Bull job queue for email and scheduled work, then deployed it on Vercel with Jest test coverage.

Open Source Contributions | Rust, Python

Mar 2026 to Apr 2026

- Fixed a redirect bug in Martin, MapLibre's Rust tile server, that ignored the route prefix flag for pbf tile requests, added a regression test, and shipped it in the v1.10.1 release.
- Fixed a sitemap URL bug in render engine cli, a Python tool, so locally served sites resolve correctly, iterating through maintainer review before merge.

Vigil | Python, FastAPI, PostgreSQL, XGBoost, LightGBM, SHAP, Optuna, React, TypeScript | [GitHub](#)

Jan 2026 to Present

- Built a multi hazard disaster prediction platform covering 7 hazard types across 15 Indian regions, with 5 per hazard models in Random Forest, XGBoost, and LightGBM tuned through Optuna, evaluated on ROC AUC, made interpretable with SHAP, and served through a FastAPI and PostgreSQL backend with a React and TypeScript dashboard.

Skills

Languages: Java, C++, Python, JavaScript, TypeScript, SQL, Groovy

Core CS: Data Structures, Algorithms, Object Oriented Design, Complexity Analysis, System Design, Operating Systems, Distributed Systems

Systems: C++ Socket Programming, POSIX APIs, TCP/IP, epoll, Concurrent Programming, RESP Protocol, Linux

Backend and Databases: Node.js, Express.js, FastAPI, REST API Design, Redis, Bull, PostgreSQL, MongoDB, JWT, OAuth 2.0

Cloud: AWS, Azure, DigitalOcean, Docker

AI and ML: LLMs, RAG, Prompt Engineering, scikit-learn, XGBoost, LightGBM, Random Forest, SHAP, Optuna, pandas, NumPy

Frontend: React, TypeScript, Vite, Tailwind CSS

Tools and Practices: Git, GitHub Actions, CI/CD, Unit Testing, Debugging, Claude Code, GitHub Copilot, Playwright, Selenium, Katalon, Postman, Jira

Education

SRM Institute of Science and Technology

Chennai, India

Bachelor of Technology, Computer Science and Engineering (Data Science), CGPA 8.78 out of 10.0

June 2023 to May 2027

Certifications and Achievements

Introduction to Machine Learning | NPTEL, IIT Madras

2024

2nd Place, Capture the Flag | SRMIST

2024