Saurab Poudel

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SUMMARY

Electronics and Communication Engineering undergraduate at Pulchowk Campus with hands-on experience in full-stack development, distributed backend systems, and AI agent orchestrators. Skilled in React, Next.js, Go, Rust, Python, FastAPI, PostgreSQL, and cloud infrastructure. AWS Certified Solutions Architect – Associate.

EDUCATION

Pulchowk Campus, Institute of Engineering, Tribhuvan University 2023 – 2027 (Expected)
B.E. in Electronics, Communication and Information Engineering Lalitpur, Nepal

EXPERIENCE

YantraCore Feb. 2023 – Jun. 2023
Front-end Intern Remote

- Built web and mobile UI features with **React.js, React Native, Next.js, and JavaScript** in a production codebase.
- Fixed application bugs and collaborated through **Git-based workflows** during a production launch.

OPEN-SOURCE CONTRIBUTIONS

Surfer | *Rust, egui* [Merged Commit]

- Fixed a bug in the Surfer waveform viewer so bit-size information is preserved in signal names when renaming signals.

PROJECTS

Cloud-Native AI Coding Agent Harness | *Python, FastAPI, React, TypeScript, PostgreSQL, Docker, TanStack Query* [GitHub]

- Architected a scalable coding agent harness executing multi-turn LLM reasoning loops with sandboxed file and shell tools (**bash, read_file, write_file**) in isolated workspaces.
- Engineered concurrent job scheduling using **FastAPI** and **PostgreSQL** atomic locks (`FOR UPDATE SKIP LOCKED`) with worker heartbeats and automatic orphan lock reclamation.
- Built a real-time developer dashboard in **React, TypeScript, and Tailwind CSS** featuring 3s polling via **TanStack Query**, in-browser workspace file browser, and task lifecycle controls (dispatch, cancel, delete).

Distributed LSM-Tree Key-Value Store | *Go, TCP, HTTP, Prometheus, Docker* [GitHub]

- Implemented a storage engine with **WAL, MemTables, SSTables, and background compaction**, plus TTL support.
- Designed leader-follower replication with quorum operations, HTTP/TCP protocols, and Prometheus monitoring.

Highly Available Two-Tier Cloud Infrastructure | *AWS, Terraform, ALB, ASG, Aurora, WAF, CloudFront* [GitHub]

- Provisioned multi-AZ AWS infrastructure with **Terraform**: VPC, subnets, ALB, and EC2 Auto Scaling.
- Configured CloudFront, Route 53, ACM, AWS WAF, and a private multi-AZ Aurora MySQL database.

Pitch – Startup Discovery Platform | *Next.js, React, TypeScript, Sanity, NextAuth* [GitHub]

- Built a platform for discovering, searching, and presenting startup pitches with **Next.js and React**.
- Integrated **Sanity CMS** for content and **NextAuth** for authentication, with a responsive UI.

CERTIFICATIONS

AWS Certified Solutions Architect – Associate 2026
Amazon Web Services

SKILLS

Programming Languages: Go, Rust, Python, JavaScript, TypeScript, C, C++

Web Development: React.js, Next.js, React Native, FastAPI, Tailwind CSS, TanStack Query, HTML, CSS

Databases: PostgreSQL, MySQL, SQLite, Sanity CMS

Core Concepts: OOP, Data Structures and Algorithms, Distributed Systems, REST APIs, TCP/IP, DBMS

Tools & Infrastructure: Git, GitHub, Linux, Docker, Terraform, AWS, Kubernetes, Prometheus