



Sidharth Kumar Singh

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 github.com/Sidharth-Singh10 

 medium.com/@sidharthsingh714 

Computer Science Undergraduate

Mobile : +91 7355360981

sidharthsingh714@gmail.com

EDUCATION

• Indian Institute of Information Technology, Lucknow

Aug 2023 - May 2027

B.Tech in Computer Science - CGPA: 8.76/10

EXPERIENCE


• GraphiteEditor | Rust, WebAssembly, TypeScript

Open-Source Contributor

- Implemented vector path closing functionality via Ctrl+J shortcut, enabling automatic endpoint connection for 2 selected points or 2-endpoint subpaths across different layers.
- Developed robust layer merging system that handles 3 path-type combinations (spline-spline, path-spline, path-path) while maintaining geometric properties and node graph structures.
- Authored and integrated over 10 automated tests into the GraphiteEditor codebase, improving reliability and preventing regressions across key vector editing features.

PROJECTS

• Affinity | React, Rust, Kubernetes, Docker, RabbitMQ, Redis, gRPC

- Overview:** Architected a full-stack social hub connecting 100+ users with shared interests, leveraging React for a responsive front-end and Rust for high-performance back-end tasks, reducing data processing time by 30%.
- Implemented actor-model concurrency with gRPC-based microservices for modular data access, leveraging Redis for caching and RabbitMQ for async task handling across PostgreSQL and ScyllaDB.
- Supports deployment with Kubernetes and Helm for orchestration and rolling updates, achieving 99.9% uptime in a scalable architecture supporting concurrent user interactions and real-time analytics.
- Created a Discord bot  designed for automated interaction within the Affinity Discord server, featuring six core modules.


• Bgit | Rust, git2-rs

- Overview:** Designed and implemented a modular Git workflow engine using Rust and git2-rs, featuring step-based task execution with built-in prompts, progress feedback, and rule-driven validation to prevent common pitfalls like committing secrets or oversized assets.
- Architected a high-performance, TOML-driven configuration system that dynamically loads and merges per-workflow rule levels and step flags at runtime—empowering teams to enforce custom validation policies and automate Git operations without recompilation.


ACHIEVEMENTS

- Completed **Hacktoberfest 2024** with 4 PRs merged in the **Hyperswitch** project.
- Won the 1st prize in the **Best AI Implementation** track at UP-AISpire hackathon.
- Rated as **Specialist on Codeforces**.
- Achieved a **3-star** rating on CodeChef (**max rating: 1712**).
- Awarded **Shubhra Khar Linux Foundation Scholarship 2024**.
- Secured **1st prize** in Linux Ricing contest initiated by Equinox, the techfest of IIIT, Lucknow.

Contributions 

Project Link 

cppprofile 

cppprofile 

Link 

SKILLS & OTHERS

- Languages:** Rust, JavaScript, Python, C++, Java, TypeScript, SQL, Bash
- Frontend:** React, NextJS, Tailwind, Accernity UI, Bootstrap, Shadcn, Ratatui
- Backend:** Express.js, Axum, SpringBoot
- Database:** MongoDB, MySQL, PostgreSQL, ScyllaDB, Redis
- Cloud & DevOps:** AWS, Docker, Kubernetes, Git, Linux, Jenkins, Nginx, Github Actions
- Soft Skills:** Teamwork, Communication, Initiative, Leadership
- Relevant Coursework:** Operating System, Compiler Design, Database Management System, Object Oriented Programming, Data Structures

POSITIONS OF RESPONSIBILITY

• Member - Axios FOSS Wing, IIIT Lucknow |

Aug 2024 - Present

- Took the lead in organizing logistics and running interactive, hands-on sessions on open-source tools and contributing to FOSS. Engaged with over 150 students, sparking interest in open-source and helping build a more active, enthusiastic community around it.