

Tejas Raj

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Education

National Institute of Technology, Durgapur

Bachelor of Technology in Computer Science and Engineering

India

Expected May 2027

Open Source Contributions

canonical / snapcraft — Python, Linux DevOps

[GitHub](#)

- **Core Framework Fix:** Resolved hardcoded fallbacks in framework linters by dynamically passing `build_base` parameters, ensuring accurate base detection for complex systems. [\[Merged PR #6272\]](#)

cpeditor / cpeditor — C++, Qt, Python

[GitHub](#)

- **Hindi Localization & Bug Fix:** Maintained global accessibility by translating 3,600+ UI strings into Hindi via Gemini API and effectively solved a critical duplicated search keyword bug. [\[Merged PR #1501\]](#)
- **Font Scaling Feature:** Applied software design principles to add user configuration toggling for Ctrl+Scroll font scaling dynamically within the code editor. [\[Merged PR #1499\]](#)
- **Tab Management:** Implemented middle-click functionality to instantly close editor tabs, streamlining UI navigation for competitive programmers. [\[Merged PR #1498\]](#)

Skills

Coursework: Data Structures & Algorithms, Software Design, Operating Systems, DBMS

Languages: C/C++, Python, Java, JavaScript (ES6+), TypeScript, SQL

Software Dev: MERN Stack (React.js, Node.js, Express.js, MongoDB), WebSockets, REST APIs

Architecture: Docker, Distributed Systems, Linux (Arch/Hyprland), Performance Debugging, Git

Projects

Distributed Key-Value Database — C++, React.js, Multithreading, Networking

[GitHub](#) | [Live App](#)

- Architected a decentralized, peer-to-peer key-value **storage solution** in **C++**, leveraging Consistent Hashing for balanced data partitioning and a Gossip Protocol for autonomous node discovery.
- Engineered a **high-performance** concurrent engine using **multi-threading** and `std::shared_mutex`, ensuring strict **synchronization** and thread-safe operations under heavy request loads.
- Implemented tunable Quorum Replication (N, W, R) for customizable consistency levels and a Write-Ahead Log (WAL) mechanism, guaranteeing instantaneous crash recovery and high **reliability**.
- Developed a real-time **React.js visualization tool** integrated with Ngrok tunneling to execute stress tests, perform **systems data analysis**, and validate operations under Chaos Engineering.

AI Job Platform : AI-Powered Career Intelligence Platform — Python, FastAPI, React, PostgreSQL

[GitHub](#) | [Live App](#)

- Architected a decoupled, scalable **AI-integrated software** platform utilizing FastAPI and React.js, processing unstructured resumes and automating real-time job discovery via async Celery workers and Redis.
- Engineered a memory-optimized semantic matching engine to **analyze information and evaluate results**, using scikit-learn TF-IDF and Cosine Similarity to calculate precise compatibility in milliseconds.
- Developed fault-tolerant **scalable engineering solutions** using the Groq API and LangChain, featuring dynamic active-model fallback loops and rigorous JSON-cleansing to guarantee 100% uptime.

Achievements

- **CodeChef:** 4★ (Max: 1804) [handle [tejas_2341](#)]
- **JEE Advanced:** Secured **AIR 4152** out of 180K+ participants.
- **JEE Main:** Secured **AIR 1832** out of 1.2M+ participants.