

# Raj Kumar

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## SKILLS

**Languages:** C/C++, Python(Basic), HTML, CSS, JavaScript, SQL

**Frameworks & Libraries:** Node.js, Next.js, Socket.IO, Tailwind CSS

**Databases:** PostgreSQL, MySQL, SAP S/4HANA

**Tools & Platforms:** Git, GitHub, VS Code, Windows,

**Soft Skills:** Problem-Solving, Analytical Thinking, Communication, Team Collaboration, Time Management

## WORK EXPERIENCE

**Sasken Technologies Ltd**

June 2025 - July 2025

*Software Intern*

- Developed a scalable load balancer in C++ to distribute client requests across backend servers using Round Robin and Least Connections algorithms.
- Integrated real-time server health monitoring (heartbeat/ping) to isolate/reintegrate unresponsive or overloaded servers, ensuring high availability.
- Applied Linux OS concepts (memory management, process scheduling, virtual memory, socket programming, IPC) to optimize scalability, resilience, and performance.
- C++, Linux, Threads, Socket Programming, Inter-Process Communication (IPC), Git
- Achieved fault-tolerant request routing with automated server isolation and reintegration, improving system availability and reliability.

## EDUCATION

**TECHNO INDIA UNIVERSITY**

Aug 2022 - Jun 2026

B.TECH in Computer Science and Engineering

**CGPA: 8.175/10**

Relevant Coursework: Object Oriented Programming, Databases, Discrete Maths, Data Structures and Algorithms, Operating Systems, Computer Networks, Machine Learning, Advance Data Structures and Algorithms

**Jeevan Jyoti Public School**

April 2019 - Jun 2021

Senior Secondary School

**PERCENTAGE: 72**

Relevant Coursework: PHYSICS, CHEMISTRY, MATHEMATICS

**D.A.V Public School**

Aug 2022 - Jun 2026

Secondary School

**PERCENTAGE: 85.8**

## PROJECT WORK

- **High-Performance Fault-Tolerant Load Balancer:** [GitHub Link] – Designed a C++ load balancer on Linux using Round Robin and Least Connections algorithms with real-time health monitoring (heartbeat/ping). Implemented multi-threading with threads, mutex synchronization, and Linux OS concepts (memory, scheduling, IPC) to ensure scalability, resilience, and fault tolerance. (Tech Stack: C++, Linux, Socket Programming, IPC, Git)
- **Tune AND Talk – Real-time Music Chat App:** [GitHub Link] – Built a real-time music chat application using Next.js, Node.js, Socket.IO, YouTube API, and Tailwind CSS, enabling users to join rooms, chat, and synchronize music playback directly from YouTube. Implemented real-time communication and shared playback control with Socket.IO, and designed a responsive, room-based UI with dynamic updates for seamless user experience.
- **FileEncryptDecrypt – Commandline File Encryption & Decryption Tool:** [GitHub Link] – Developed a C++17 tool to securely encrypt and decrypt files within directories. Implemented core file handling and cryptography logic, leveraging modern C++17 `<filesystem>` for directory traversal. Built a modular architecture separating encryption, file I/O, and process management, with future support for multithreading and parallel processing. Automated builds using Makefile for efficient compilation. (Tech Stack: C++17, Linux/WSL, Makefile)

## ACHIEVEMENTS

- Solved **500+ problems** on **LeetCode and GFG**, focusing on Data Structures and Algorithms.
- Active on GitHub with multiple projects, contributing to C++ and Web Development communities.

## CERTIFICATIONS

- Data Structures and Algorithms in C++ - Code Help
- Full Stack Web Development-Udemy by Hitesh Choudhary
- SAP S/4HANA ESSENTIALS