

Karan Singh

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ACADEMIC DETAILS

Year	Degree/Exam	Institute	GPA/Marks (%)
Aug, 2022 – Present	B.Tech in Computer Science	Graphic Era Hill University, Dehradun	8.6/10.0
2019	12th, CBSE	Army Public School ,Dehradun	97.4%
2017	10th, CBSE	Doon Valley Public School,Dehradun	97.2%

COURSEWORK

• Data Structures and Algorithms • Database Management Systems • Operating Systems • Software Engineering

PROJECTS

Process Scheduler Project in MINIX-3 operating system :

- **Engineered** three advanced CPU scheduling algorithms (SRTE, LRTE, MLFQ) into the MINIX-3 kernel, improving process throughput and fairness by **35%** in benchmark simulations.
- **Implemented** efficient process context switching, reducing average scheduling overhead by **~18%** during multitasking tests..

Real-Time Multiplayer Chess Game (Jan-2024 –Feb-2024)

- **Constructed** a scalable, real-time chess game using **React.js**, **Node.js**, **Socket.IO**, and **Chess.js**, supporting **2–10 concurrent players** with live spectator mode.
- Orchestrated **WebSocket communication** to achieve <100ms latency, ensuring smooth gameplay and real-time updates across clients.

Bookkeeping Web Application (Nov-2024–Dec-2024)

- **Architected** a full-stack bookkeeping app using **Node.js**, **Express.js**, **EJS**, and **MongoDB**, enabling **100% CRUD** support for customers and financial transactions.
- **Optimized** backend performance by reducing database response time by **22%** through efficient indexing and modular MVC structure.

Full Stack Music Website (May-2025–June-2025)

- **Designed and deployed** a dynamic music web app using **React**, **Express**, **Node.js**, and **MongoDB**, supporting **CRUD operations** for over **1,000+ songs and albums**..
- **Integrated** Context API, Axios, React Router, and Vite, improving frontend load speed by **~40%**.
- **Launched** the app on **Vercel**, achieving **100% mobile responsiveness** using Tailwind CSS.

Finance Visualizer (July-2025)

- **Developed** a dynamic finance dashboard with **10+ RESTful APIs** to track real-time budgets and transactions, processing over **1,200 entries** and handling **500+ API calls/day** during testing.
- Visualized financial insights using **Recharts (pie, bar, radar, line)**, and secured backend with **MongoDB Atlas**, **.env configs**, and **CORS handling** for scalable and safe deployment.

TECHNICAL SKILLS

- **Languages:** C, C++, JavaScript, SQL.
- **Technologies:** HTML, CSS, JavaScript ,React js, Express js,Mongodb.
- **Tools:** Visual Studio Code, Git/GitHub.
- **Developer Tools :** VS code ,Git/Github ,Postman

SOFT SKILLS

- Strong communication, leadership, and problem-solving skills.

EXTRA-CURRICULAR ACTIVITIES

- Won InterCollege Football President Cup ,long jump and high jump gold medalist at School level .
- Participated in debate competitions, part of organising committee of farewell.

SCHOLASTIC ACHIEVEMENTS

- Cleared Nda exam ,Jee mains with 91 percentile.
- One of the highest scorers in district in class 10th and 12th with 97 percentage aggregate in both.

CERTIFICATIONS

- **Google Cloud Computing Foundations, NPTEL - IIT Kharagpur (2023)** • **Deep learning Fundamentals from Coursera Platform**