

# Yash Kumar Singh

Portfolio: [yash-dev-portfolio-website.vercel.app](https://yash-dev-portfolio-website.vercel.app)  
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## EDUCATION

- **National Institute of Technology Durgapur**

B.Tech in Chemical Engineering

2024 – Present

CGPA: 7.5/10

Relevant Coursework: Data Structures & Algorithms, Object-Oriented Programming, Database Management Systems, Operating Systems

## TECHNICAL SKILLS

- **Languages:** JavaScript (ES6+), TypeScript, C, C++
- **Frontend:** React.js, Next.js, Tailwind CSS, Redux
- **Backend:** Node.js, Express.js, REST APIs, WebSockets, Socket.io, MVC Architecture
- **Databases & Authentication:** MongoDB, MySQL, Redis, JWT, NextAuth.js, Clerk
- **Core CS:** Data Structures & Algorithms, OOP, DBMS, Operating Systems
- **DevOps & Deployment:** Docker, CI/CD, GitHub Actions, Vercel, Render
- **Tools & Platforms:** Git, GitHub, Linux, Postman, Figma

## EXPERIENCE

- **Full Stack Developer Intern**, Techxica Technology Pvt. Ltd. (*Remote*) Nov 2025 – Present
  - Built e-commerce product management for 40+ products, admin workflows, and payment gateway integration.
  - Redesigned company website using React, Tailwind CSS, and REST APIs, reducing load time by ~ 25%.
  - Maintained clean codebases through Git workflows, PR reviews, and collaborative development practices.

## PROJECTS

- **BudgetTracker AI (Full-Stack Application)** (Live Demo | GitHub Repo)

Tech Stack: Next.js 14 (TypeScript), TailwindCSS, MongoDB, Clerk Auth, Chart.js, OpenRouter API

- Built expense tracker with OpenRouter LLM API for AI categorization across 6+ categories, reducing manual entry by ~ 90%.
- Implemented Chart.js analytics dashboard with bar/pie charts for spending trends supporting dark/light mode.
- Integrated MongoDB connection pooling and AI-generated personalized spending insights with budget recommendations.
- Developed Clerk authentication with protected routes and type-safe TypeScript API endpoints for enhanced security.

- **Expense Splitter App (Real-Time System)** (Live Demo | GitHub Repo)

Tech Stack: React (TypeScript), TailwindCSS, Node.js, Express.js, MongoDB, Socket.io

- Developed real-time expense platform using Socket.io WebSockets with < 100ms latency, supporting 20+ concurrent groups.
- Built Express.js RESTful API with flexible splitting algorithms, JWT authentication, bcrypt password hashing, and automated calculations, reducing manual work by ~ 80%.
- Implemented React.lazy() code-splitting for route-based lazy loading, reducing initial bundle size by ~ 30%.
- Designed responsive TailwindCSS UI with MongoDB schema for persistent group storage and expense tracking.

- **LRU Cache Implementation (DSA + Low-Level Design)** (GitHub Repo)

Tech Stack: C++, STL, Hash Maps, Doubly Linked Lists

- Implemented memory-efficient LRU Cache with **O(1)** get/put operations using `unordered_map` and custom DLL.
- Designed automatic eviction policy reflecting real-world cache systems used in browsers and databases.
- Applied OOP principles with encapsulation and efficient memory management.

## ACHIEVEMENTS

- **Smart India Hackathon 2025:** Developed disaster response drone dashboard integrating Raspberry Pi APIs for real-time thermal imaging and GPS tracking, advancing to college finals.
- **LeetCode:** Solved **200+** problems across arrays, trees, graphs, dynamic programming, and backtracking.
- **GitHub:** Maintained **500+** contributions across 6+ repositories, including a 30-day C++ OOP/STL practice series.
- **Problem-Solving:** Optimized algorithms from **O(n<sup>2</sup>)** to **O(n log n)** and implemented cache-efficient data structures.
- **Leadership:** Coordinated Alumination 2025 (Alumni Fest) at NIT Durgapur for 100+ alumni attendees.