

# BALKARAN SINGH

## Personal Portfolio

Ropar, Punjab

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## Education

**Dr. B.R. Ambedkar National Institute of Technology, Jalandhar**

*Bachelor of Technology in Computer Science, CGPA: 8.52*

**Aug 2023 – Present**

*Jalandhar, Punjab*

**Shri Guru Ram Rai Sen Sec School, Ropar**

*Senior Secondary Education (12th: 94.4%, 10th: 92%)*

**2019 – 2023**

*Ropar, Punjab*

## Experience

**Campus Hostel Allotment Website (Backend Developer)**

**Sep 2025 – Present**

*Improved backend features and solved critical logic issues for the campus hostel allotment system*

*Jalandhar, Punjab*

- Implemented a rule-based validation system to restrict more than two students from the same state per room, ensuring fairness in first-year hostel allotment.
- Enhanced room-status visualization with color-coded indicators for fully booked, partially booked, and empty rooms, and collaborated with the team to optimize allocation logic and overall backend efficiency.

## Projects

**Fluento - Connect and Speak** | ReactJS, TailwindCSS, ExpressJS, NodeJS, DaisyUI, Stream.io

**GitHub**

**May 2025**

- Developed a full-stack MERN language exchange platform with real-time chat, HD video calling, and a 7+ page architecture. Engineered a multi-state user journey with a 2-tier friend system (pending/accepted) and live updates.
- Integrated Stream.io APIs for 1080p video quality and unlimited sessions. Secured the app with JWT authentication, used MVC structure in backend, implemented 4-tier responsive breakpoints, and designed a mobile-first interface with 32+ DaisyUI themes and 7 DiceBear avatars (200×200px).

**Shrinkster - URL Shortner** | ReactJS, MongoDB, NodeJS, Express, Tanstack, Redux Toolkit

**GitHub**

**March 2025**

- Architected a scalable, high-performance URL shortener with custom slugs, guest/auth modes, and real-time analytics across 10+ REST APIs with error handling.
- Executed secure authentication using JWT, bcrypt, and middleware for data validation, achieving sub-200ms response time and 99.9% uptime. Designed a responsive React frontend powered by Redux Toolkit and TanStack Query, featuring 15+ reusable components and smooth UI transitions.

**DijkstraGram - Live Dijkstra Visualizer** | C++, HTML/CSS, React, Node.js, Express.js, JavaScript

**GitHub**

**Jan 2025**

- Constructed a Dijkstra visualizer with 25×55 grid, real-time path animation, drag-and-drop walls, and step-by-step highlighting to enhance algorithm learning.
- Built a full-stack app with React frontend and Node.js backend, integrating a live C++ editor for real-time algorithm execution across a 3-page responsive layout. Enhanced the learning experience with interactive visualization, dark/light theme toggle, and adaptive layouts for screens above 480px.

## Technical Skills & Certifications

**Languages:** C, C++, Python, JavaScript, HTML/CSS

**Frameworks & Libraries:** React.js, Node.js, Express.js, Tailwind CSS, Redux Toolkit, DaisyUI, TanStack Query, REST APIs, bcrypt

**Databases & Tools:** MongoDB, MySQL, Git, GitHub, VS Code, JWT Authentication, Cloudinary, Postman, Render

**Relevant Coursework:** Data Structures & Algorithms, Object-Oriented Programming, Database Management Systems, Computer Networks

**Certifications:** Completed [The Web Developer Bootcamp 2025 by Colt Steele \(Udemy\)](#) — Full-stack development(MERN)

## Coding Profiles

**LeetCode** — Mastered 900+ problems on LeetCode (Knight badge), specializing in algorithms, data structures, and problem-solving.

**Code 360** — Completed 100+ coding challenges and earned 30+ badges by mastering core DSA topics.

**GeeksforGeeks** — Solved 100+ practice problems, demonstrating proficiency in algorithms and securing an institute rank under 850.

## Achievements

- Achieved a **1950+** rating on LeetCode, secured **625 rank** in Biweekly Contest 163 and **369 rank** in Biweekly Contest 165.
- Secured **5th rank** in Codestorm Campus Competition (2nd Year) among all 2nd-year students.
- Competed in the Vibe Coding Challenge: Inter-College Edition 2025, orchestrated by B. M. Institute of Engineering & Technology (BMIT), Sonapat, and secured a spot in the Finale.