

# Harsh Ledwani

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## About

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Computer Science undergraduate with a strong focus on full-stack web development and problem solving. Experienced in building responsive web applications using React, Node.js, and MongoDB, with hands-on exposure to payment integrations, authentication, and real-time data handling. Actively working on modern web projects and strengthening data structures, backend architecture, and scalable application design.

## Skill Set

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### Technical Skills:

Programming Languages	C++, C, Java, Python
Frontend Development	React.js, Next.js, HTML5, CSS3, JavaScript
Backend Development	Node.js, REST APIs
Databases	MySQL, MongoDB
Operating Systems	Linux, Ubuntu, Windows
Libraries	Pandas, NumPy, Scikit-learn, PyTorch
Tools & Platforms	Git, GitHub, Google Colab, Visual Studio Code
Core CS Skills	Data Structures and Algorithms, OOP, DBMS, OS
Soft Skills	Problem Solving, Critical Thinking, Team Collaboration

## Projects

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### ReplicaSync – Offline-First Sync Engine with Conflict Resolution

*Ongoing*

- Designing and developing an offline-first notes application using Next.js (App Router), TypeScript, and Tailwind CSS, supporting full CRUD operations without network connectivity.
- Implementing an operation-based synchronization engine that queues local create, update, and delete operations in IndexedDB and synchronizes them with a PostgreSQL-backed backend.
- Building a conflict resolution mechanism using field-level merging and a deterministic Last-Write-Wins (LWW) strategy based on client timestamps to ensure eventual consistency across devices.
- Developing backend sync APIs to apply operations, manage versioning, and return authoritative server state to clients.
- Writing unit tests to validate conflict resolution logic and ensure correctness under concurrent updates.

### SecureFlow – Fraud Detection System for Digital Payments

*(Completed) | Actively*

### Improving

- Designed and implemented a fraud detection system to analyze digital payment transactions and identify suspicious patterns using machine learning techniques.
- Built backend logic to process transaction data, perform anomaly detection, and generate fraud alerts in near real time.
- Explored blockchain concepts to enhance transparency and immutability of transaction records.
- Continuously improving the system by experimenting with better detection strategies, optimized models, and scalability enhancements.

## **Website for Zunj Divyang Sanstha**

- Led frontend development using React.js to build a responsive website with donation and volunteer management functionality.
- Integrated Cashfree Payments API and webhooks to securely process online donations.
- Implemented campaign-wise donation tracking to improve transparency and provide real-time insights.

## **Extracurriculars & Leadership**

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- Conducted introductory workshops on **C programming** and **Linux fundamentals**, helping peers understand core concepts, command-line usage, and problem-solving approaches.
- Volunteered in organizing and conducting a **Robotics workshop for government school students**, introducing basic robotics concepts, hands-on activities, and logical thinking.
- Member of the **Design Team for the college technical fest**, contributing to planning, visual design, and coordination for technical events.

## **Education**

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10 <sup>th</sup> CBSE – Greenway Modern Sr. Sec. School, New Delhi	90%
12 <sup>th</sup> CBSE – Greenway Modern Sr. Sec. School, New Delhi	73%
B.Tech CSE – Symbiosis Institute of Technology, Pune	-