

# Ayush Singh

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Bachelor of Technology

Heritage Institute of Technology, Kolkata

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## EDUCATION

### • Bachelor of Technology in Electronics and Communication Engineering

Heritage Institute of Technology, Kolkata

2021–2025

## PERSONAL PROJECTS

### • Gym and Fitness Webapp (GitHub Link)

Developed a full-stack web app using ReactJS, NodeJS, ExpressJS, and MongoDB to provide over 100+ fitness exercises and diet plans.

- Utilized JWT authentication for secure login and RapidAPI for dynamic fitness data integration, achieving a 20% increase in user retention.
- Implemented pagination and rate limiting to efficiently fetch and handle up to 500 exercise entries without overloading the API
- **Technology Used** : ReactJS, NodeJS, ExpressJS, MongoDB, Material UI, RapidAPI.

### • A booking system of nearby hotels (GitHub Link)

Developed a full-stack hotel booking system with an admin panel using React.js, Node.js, Express.js, Redis cache, and MongoDB.

- Optimized booking operation routes, improving code efficiency by 50% and reducing response time
- Implemented Redis caching and Tailwind CSS to significantly boost load times and deliver a responsive, mobile-first user experience across platforms.
- Developed advanced room filters for location, availability, and date-specific searches to improve user navigation.
- Integrated Stripe for secure, 30% faster payments, ensuring seamless and reliable transaction experiences for users.
- **Technology Used** : React.js, Node.js, Express.js (TypeScript), Redis, Tailwind CSS

### • Drowsiness Detection System (GitHub Link)

Fabricated a final year group project—a real-time drowsiness detection system that sends live alerts with sound sirens and live locations.

- Built the web module of a real-time AI-based drowsiness detection system using React.js and Next.js, integrated with the YOLOv11 model (70%+ accuracy) for driver monitoring.
- Captured periodic screenshots via react-webcam and established WebSocket connections for live data exchange with the ML backend.
- Designed a threshold-based alert system (green, yellow, red) with browser-based sirens and real-time driver location.
- **Technology Used** : Next.js, Express.js (TypeScript), Websockets, Tailwind CSS.

## INTERNSHIPS & TRAINING

### Full stack developer internship (Link)

Feb – May 2024

Canverro

Online

- Worked as a Full Stack JavaScript/TypeScript Developer on an e-commerce platform, contributing to both frontend and backend development.
- Migrated the existing JavaScript codebase to TypeScript, improving code efficiency by 25% and enhancing maintainability.
- Reviewed code and collaborated with the team to identify and resolve critical bugs, ensuring a stable and scalable application.
- Used PostgreSQL and MongoDB queries to analyze user behavior and optimize API performance in projects.

## TECHNICAL SKILLS AND INTERESTS

**Languages:** C++ , Javascript ,Typescript , HTML+CSS , SQL.

**Technologies:** Node.js, Express.js, TailwindCSS, MUI , ORM(Prisma , Mongoose) , Docker.

**Testing tools:** Jest , Supertest , Postman.

**Databases:** MongoDb, PostgreSQL(beginner).

**Concepts:** OOPs, Database Management System, Data Structures & Algorithms , Agile methodology.

**Soft Skills:** Analytical Thinking , Problem Solving, Self-learning, Presentation.

## ACTIVITIES AND ACHIEVEMENTS

- Secured runner-up position in Hult Prize (HITK Campus) Season 2023.
- Certified Postman Student Expert.
- Google Developer Student Clubs Team Coordinator – organized workshops, led sessions, and presented in front of 100+ students.
- GirlScript Summer of Code (GSSoC)[2025] - Selected for GirlScript Summer of Code; contributed to open-source projects by fixing bugs, adding features, and improving documentation.