

# HARIOM SINGH

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[github.com/singhHariom1](https://github.com/singhHariom1) [🌐 Portfolio: barbelltobinary.netlify.app](https://barbelltobinary.netlify.app)

## Technical Skills

**Languages:** C++, JavaScript, SQL

**Frontend:** React.js, HTML5, CSS3, Tailwind CSS, Material UI

**Backend:** Node.js, Express.js, RESTful APIs, Socket.IO

**Databases:** MongoDB, PostgreSQL, MySQL, Firestore (NoSQL)

**Cloud & Tools:** Google Cloud Storage (GCS), Git, GitHub, Postman, Render, Vercel, Stripe

**AI & Automation:** Gemini AI API, prompt-based AI workflows

**Computer Science:** Data Structures & Algorithms, OOP, DBMS, OS, Computer Networks

## Experience

### Teched Trainings | Backend Developer Intern

Aug 2025 – Dec 2025

- **Storage Service:** Developed a scalable backend storage service using PostgreSQL for metadata and Google Cloud Storage (GCS) for file handling.
- Implemented secure, private-by-default file access using GCS Signed URLs.
- Built stateless file upload workflows to support concurrent uploads and horizontal scalability.
- Designed modular backend components to support multiple cloud storage providers (GCS/S3-ready).
- Implemented hierarchical folder structures using recursive parent-child relationships (Google Drive-like).
- **Chat Service:** Engineered a real-time messaging service using Socket.IO with room-based communication.
- Designed a scalable Firestore schema for chat messages with optimized reads for active conversations.
- Implemented JWT-based authentication, typing indicators, read receipts, and soft-delete functionality.
- Exposed internal REST APIs to integrate chat with user and course services.
- **Live Q&A Service:** Built a relational service using PostgreSQL and Sequelize for threaded discussions.
- Developed transactional API endpoints for session creation, message handling, and state updates.
- Collaborated in an Agile/Scrum environment with code reviews and cross-service integration.

## Projects

### StudySync AI | MERN, Gemini API, Tailwind

[StudySync AI](#)

- Built an AI-powered learning assistant for doubt solving and contextual resource suggestions.
- Developed productivity tools including a task planner and Pomodoro timer.
- Delivered a responsive UI using React and Tailwind; deployed via Vercel and Render.

### Real-time Chat Application | MERN, Socket.IO

[PingMe](#)

- Engineered real-time messaging with typing indicators, presence tracking, and room-based events.
- Implemented JWT-based authentication and optimized client-side state synchronization.
- Ensured consistent performance across multiple devices and network conditions.

### Secure Authentication & Authorization Service | Node.js, Express, MongoDB, JWT

- Designed a stateless authentication system using JWT access and refresh tokens with rotation.
- Implemented role-based access control (RBAC) and secure logout via token invalidation.
- Secured sessions using HttpOnly cookies and bcrypt-based password hashing.

## Academic & Extracurricular Achievements

- Qualified National Talent Search Examination (NTSE) Stage 1.

- Represented college at IBM CSR Annual Event 2024 as a selected delegate.

- Solved 600+ Data Structures & Algorithms problems across LeetCode, GFG, and Coding Ninjas.

## Education

### Gurukul Kangri Vishwavidyalaya, Haridwar, India

2021 – 2025

B.Tech in Computer Science and Engineering — CGPA: 8.11