

# Vishnu Datta

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## EDUCATION

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**Indian Institute of Information Technology, Sri City**  
*Bachelors of Technology in Computer Science and Engineering*

Aug. 2023 – May 2027  
*Sri City, India*

## TECHNICAL SKILLS

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**Languages:** Java, HTML, CSS, JavaScript (ES6+), TypeScript, C, Python, SQL, JSON

**Frontend & Backend:** React.js, Next.js, Node.js, Express.js, Prisma, Shaden UI, Tailwind CSS, Vite

**Databases, Real-Time & APIs:** PostgreSQL, MongoDB, Redis, Socket.io, WebSockets, RESTful APIs, REST APIs

**Tools & Platforms:** Git, GitHub, Docker, Postman, Chrome Extensions

## PROJECTS

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**CodeRep** | *Next.js, TypeScript, PostgreSQL, Prisma, Clerk, Chrome Extension, Tailwind CSS* | GitHub 🐙 | [Live Demo](#)

- Engineered a full-stack web application with **Chrome Extension (Manifest V3)** implementing spaced repetition algorithms to optimize LeetCode problem retention, serving automated review scheduling for **20+ daily active users**.
- Designed a robust RESTful API with **10+ endpoints** using **Next.js App Router** and **Prisma ORM**, implementing dual authentication (Clerk OAuth + token-based) crafted for **high availability and low-latency data synchronization**.
- Developed an intelligent content script with **MutationObserver API** to detect LeetCode submissions in real-time, achieving **near-perfect detection accuracy (99%)** by strictly filtering for submission result metadata.
- Built an adaptive interval calculation system using **exponential backoff (1.2x-4x multipliers)**, reducing review frequency by **60%** while maintaining 70%+ problem recall rates across user cohorts.

**FluenSee** | *React, Node.js, MongoDB, Google Gemini API, Socket.IO, Stream SDK, JWT* | GitHub 🐙 | [Live Demo](#)

- Developed an AI-powered language tutor using **Google Gemini 2.5 Flash**, implementing a role-play agent that delivers real-time conversational practice with instant grammar corrections.
- Integrated high-quality **1v1 video calling** using the **Stream Video SDK**, enabling seamless peer-to-peer language exchange with synchronized connection states.
- Implemented a robust authentication system using **JWT** and **HTTP-only cookies** to secure user sessions, enforcing protected routes through custom **Express** middleware.
- Constructed a scalable frontend with **React + Vite**, leveraging **Zustand** for global state management and **TanStack Query** for efficient server-state caching and synchronization.

**AlgoClash (In Progress)** | *React, Node.js, Socket.IO, MongoDB, Piston API* | GitHub 🐙 | Oct 2025 – Present

- Orchestrated a real-time **1v1** coding battle platform using **Socket.IO**, employing deterministic event synchronization to prevent state desynchronization across isolated match rooms.
- Designed a scalable tournament algorithm that programmatically generates bracket trees for **32+** participants, enabling automatic round advancement.
- Implemented an in-memory session registry with  $O(1)$  access complexity to track active participants, enabling real-time presence detection without redundant database queries.
- Built a secure remote code execution pipeline using the **Piston API**, enforcing compile-time constraints and normalizing output across **8** programming languages.

## ACHIEVEMENTS

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- Solved **200+** Data Structures & Algorithms problems across platforms like **LeetCode** and **CodeChef**, demonstrating consistent problem-solving discipline and proficiency in Java.
- Achieved a rating of **1700** in **LeetCode** contests, placing in the top **13%** globally.
- Developed and launched **CodeRep**, a productivity extension designed to optimize competitive programming revision schedules through automated spaced repetition, demonstrating initiative in solving real-world developer pain points.