# Ranajit Das

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## Profile Summary

Full-stack MERN developer with hands-on experience in building scalable web applications using JavaScript, React, TypeScript, and Node.js. Skilled in designing efficient and user-friendly solutions with MongoDB and SQL.

## Education

**HOOGHLY ENGINEERING AND TECHNOLOGY COLLEGE (HETC)** *Sept 2021 – July 2025*
*B.Tech in Computer Science*

- GPA: 8.62/10.0

## Projects

**Real-Time Tic Tac Toe Game With Integrated Chat Feature** *Live link* - *GitHub*
*React.js, Node.js, Express.js, Socket.IO*

- Developed a real-time multiplayer tic-tac-toe game with **integrated chat functionality** for 2 players.
- Implemented a **matchmaking system to find online players** currently looking for a match.
- Utilized WebSocket communication using Socket.IO for seamless online gameplay.
- Integrated an **offline mode for local 2-player matches** on the same device.

**Snip X: A Code Snippet Sharing Platform** *Live link* - *GitHub*
*React.js, Next.js, MongoDB, Tailwind CSS*

- Developed a **full-stack CRUD application for creating, editing, and copying code snippets**, with efficient categorization through multiple tags and a randomized feed displaying 20 user posts on each page reload.
- Integrated **Google authentication for secure sign-in/sign-out, allowing users to create and manage profiles**, explore shared snippets, while reducing log-in time by 30%.
- Designed an **advanced search feature, enabling users to search for specific users or tags**, with clickable tags filtering related posts from over 100 snippets.

**Sorting Algorithm Visualizer** *Live link* - *GitHub*
*HTML, CSS, Vanilla JavaScript*

- Built an interactive sorting algorithm visualizer using advanced JavaScript and DOM manipulation, **featuring over 5 sorting algorithms with real-time animations.**
- Facilitated **comparisons of algorithm performance and time complexity, with detailed information on each sorting algorithm**, allowing users to adjust array size up to 60 elements and visualize results with randomly generated arrays.

## Academic Projects

**Handwritten Math Expression Recognizer And Solver** *Demo* - *GitHub*
*Python, TensorFlow, OpenCV*

- Developed a machine learning-based handwritten math expression recognizer, **enabling users to write equations on a canvas**.
- Built a model to extract and solve equations, **accurately recognizing over 20 classes**, including digits and operators.

## Technologies

**Programming Languages:** Java, C, JavaScript, TypeScript, Python

**Frameworks & Tools:** React.js, Next.js, Redux, Zustand, Tailwind CSS, Shadcn UI, Node.js, Express.js, Redis

**Databases:** MongoDB, SQL