NIKHIL NAGAR

C++ Programmer - MERN Stack Enthusiast

☎ +91-7073090976 ✉ nikhilnagar2963@gmail.com 🔗 Linkedin 🐙 GitHub 🔗 Portfolio

Education

IIT KHARAGPUR   **Sep 2022 – present**
Bachelor of Science in MATHEMATICS - 7.65 cgpa   *Kharagpur, West-Bengal*

Projects

Social media platform │ *Node.js, Express.js, EJS, and MongoDB.*   **Link**
- Developed a scalable social media platform featuring **OTP-based email verification**, real-time user interactions, and engaging functionalities such as posting, likes, comments, and saved posts.
- Integrated robust **user authentication mechanisms** using **bcrypt** for password hashing, **JWT** for secure session management, and **Cookie-parser** for efficient cookie handling, ensuring seamless and secure user experiences.
- Reduced **server response times by 75%** through **asynchronous APIs, microservices** architecture, and optimized database schemas, enhancing user satisfaction and performance.
- Implemented **optimized file handling** with Multer to enhance resource utilization and ensure peak performance.
- Designed a responsive, user-friendly interface using **EJS templates** and **Tailwind CSS** for seamless navigation.

Live Whiteboard │ *React.js, Node.js, Socket.io and Express.js.*   **Link**
- Built an interactive whiteboard leveraging the **canvas HTML tag** and **Rough.js library**, offering various drawing tools and customization features (e.g., color changes, text input).
- Enabled **real-time collaboration** by integrating **Socket.io**, allowing seamless synchronization of drawing elements across devices and enabling multiple users to interact within the same session.
- Implemented **dynamic room creation** and joining system with unique session IDs, supporting collaborative workflows.
- Optimized **session management** with temporary storage to ensure scalable and smooth multi-user interactions.

Chess game │ *Node.js, Socket.io, EJS, and Express.js.*   **Link**
- Developed a responsive chess game with r**eal-time gameplay**, an intuitive **drag-and-drop interface**, and live updates.
- Utilized **Chess.js** to manage game mechanics, including move validation, rule enforcement, and detection of checkmate.
- Integrated **Socket.io** for real-time communication, enabling synchronized moves and **live chat** to enhance engagement.

Technical Skills

Programming Languages: C++**,** C**,** Python**,** JavaScript**,** HTML**,** CSS**,** EJS.
Frameworks & Libraries: React, Node.js, Express, Tailwind CSS, C++ STL, MATLAB.
Tools & Platforms: MongoDB, MySQL, Git, GitHub, VS-Code, Sublime Text, macOS, Ubuntu.

Awards & Achievements

- Secured **99.3%ile in JEE Main 2022** among 10 Lakh candidates conducted by National Testing Agency**.**
- Secured **ALL India rank 2059** in **JEE Advanced 2022** among 2 Lakh qualified candidates.
- Solved **300+ problem**s on LeetCode and AlgoZenith, improving algorithms, data structures, and problem-solving skills**.**

COURSEWORK INFORMATION

Institute Courses: Programming and Data Structures(+lab)**,** Advanced Calculus**,** Linear Algebra**,** numerical and Complex Analysis**,** Probability and Statistics**,** Stochastic Processes and Applications**,** Combinatorics and Graph Theory**,** Transform Calculus**,** Theory of Computations**,** Design and Analysis of Algorithms(+lab)**,** Computer Organization and Architecture(+lab)**,** Optimization techniques(+lab).
Online Courses: DSA & CP(AlgoZenith)**,** Backend(Sheryians Coding School)**.**