Harsh Raj

✉ Email | ☎ Phone | 🔗 Website | 💼 LinkedIn | ⚙ Github

Education

Siksha 'O' Anusandhan University, B.Tech in Computer Science — Nov 2022 - Present
- CGPA: 9.1/10
- **Coursework:** Computer Architecture, Operating Systems, Algorithm Design

Chinmaya Vidyalaya, HSE — Apr 2020 - Apr 2022
- Percentage: 92.6

Projects

LEARNiQ ⚙ LEARNiQ
- Developed and deployed a gamified e-learning platform, LEARNiQ, as part of a month-long team project. Implemented features such as quizzes, leaderboards, badges, and progress tracking, resulting in 85% quiz completion rates, <300ms response time, and 99.8% uptime.
- Collaborated in Agile sprints to integrate a responsive UI and secure backend, significantly enhancing user engagement and scalability.
- Technologies: React.js, Node.js, MongoDB, JavaScript

Sorting Visualizer ⚙ Sorting Visualizer
- Designed and implemented an interactive sorting visualizer showcasing 3 algorithms: Bubble Sort, Merge Sort, and Quick Sort. Enabled users to observe step-by-step execution and performance comparisons, enhancing algorithm comprehension. Optimized visualization for clarity and improved user engagement.
- Technologies: React.js

Banker's Algorithm for Deadlock Avoidance
- Implemented the Banker's Algorithm to ensure system safety in resource allocation. Calculated the "Need" matrix for processes by comparing maximum resource demands and allocated resources. Evaluated system safety and generated a safe sequence for process execution, ensuring no deadlock. Tested with 5 processes and 4 resources, providing a safe state or identifying unsafe conditions.
- Tools: C

Achievements

- Secured **All India Rank 10** in Sunshine CodeFest, organized by Coding Ninjas.
- Placed in the **Top 10** out of **80+ teams** in HackerWar 4.0 (Internal Hackathon for SIH).
- Codeforces Rating: **1128** (Max), Codechef Rating: **1462** (Max).

Technologies

Languages: C++, C, Java, Python, JavaScript
Frameworks: React.js, Node.js, Express.js
Databases: MongoDB, PostgreSQL, MySQL
Tools/OS: VS Code, GitHub, Linux
Soft Skills: Problem Solving, Leadership, Accountability

Extracurricular Activities

Coordinator, Codex
- **Organized and led multiple events,** significantly enhancing engagement and participation within the developer community.
- **Developed and deployed an interactive quiz platform,** catering to over 1200+ users for Codex Start. The platform facilitated seamless user interaction, attracting participants and increasing the platform's user base.
- **Directed technical execution,** ensuring flawless operations.
- **Automated MongoDB management tasks using Python and PyMongo,** streamlining previously manual processes and significantly reducing time spent on data handling by 50%.