



Ayush Kumar

Computer Science and Engineering
Indian Institute Of Technology, Bhubaneswar
Portfolio:**Redirect**

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EDUCATION

- **Indian Institute of Technology, Bhubaneswar** 2020 - Ongoing
Dual Degree(B.Tech + M.Tech) in Computer Science and Engineering CGPA_s: 7.72
- **Prakritik School** 2020
Class 12(10+2), Central Board of Secondary Education, Bihar Percentage: 92.60
- **Dr. G.L. Dutta D.A.V. Public School** 2018
Class 10, Central Board of Secondary Education, Bihar Percentage: 93.20

EXPERIENCE

Research Intern

AHRC - (AI & HPC Research Centre), IIT Bhubaneswar (May2024-Jul2024)

- Developed an AI/ML system for daily health monitoring and behaviour analysis of goats.
- Geospatial modeling and analyses for environmental management.

Teaching assistant:

- Teaching Assistant for Computer Organization Architecture lab and Network Systems Security theory, guiding students in simulations, concepts, and queries.

PERSONAL PROJECTS

• **iNotePad – Online Notes-taking application with fast Response time.** (May2023-Jun2023)

iNotePad is a note-taking web app where users can create accounts and take notes.

- By ingeniously integrating multiple NoSQL databases within a single application, we have created a groundbreaking solution for load and resource distribution, specifically tailored for smaller projects. This ingenious approach minimises costs associated with high search demands and maximises efficiency, ushering in a new era of scalability and performance.
- **TECH-STACK:** MERN Stack – MongoDB, Expressjs, Nodejs, React.js, Bootstrap.

• **FileCompressor – File compression using Huffman coding.** (Sep2022-Oct2022)

Lossless file compression and decompression application.

- This project implements file compression and decompression using the Huffman coding technique, a widely used algorithm for lossless data compression.
- The software uses Huffman coding to assign variable-length codes to input characters based on frequency, optimizing data compression with shorter codes for frequent characters.
- **TECH-STACK:** C++.

• **SIMD – Single Instruction Multiple Data Processor with custom DRAM.** (Oct2022-Nov2022)

SIMD: Simulated version of SIMD with 32-bit Custom DRAM file on Logisim.

- Designed SIMD processor with 32-bit custom DRAM for optimised sequential instruction execution.
- Achieved faster memory access and reduced latency through tailored DRAM array integration.
- Ensured project success by leading cross-functional team, rigorous testing, and seamless processor-DRAM integration.
- **TECH-STACK:** Theoretical Knowledge of Computer Organization and Architecture, LOGISIM

SKILLS

Languages Familiar : C, C++, Python, JavaScript, SQL, PL/SQL, MySQL

CS Fundamentals : Computer Networks, Database Management Systems (DBMS), Operating Systems, Object Oriented Programming (OOPs), Compiler Design, Computer Organization and Architecture.

Relevant Coursework: Probability and Statistics, Design and Analysis of Algorithms, Machine Learning (ML), Data Structures and Algorithms (DSA), Software Engineering.

Web Development : HTML5, CSS3, Tailwind CSS, JavaScript, **React.js, Node.js, Express.js, MongoDB.**

Soft Skills : Time Management, Teamwork, Problem-solving, Documentation, Engaging Presentation.

ACHIEVEMENTS

- Among the top **5%** participants of **Adobe GenSolve Hackathon.**
- Solved more than **1100 coding problems** across all platforms. And secured **179th** place in Job-A-Thon 35, showcasing strong problem-solving abilities.