

Harsh Dalwadi

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EDUCATION

Indian Institute of Information Technology and Management, Gwalior

Graduating 2021 - Expected May 2026

Bachelor and Master of Technology in Information Technology.

8.58 CGPA

PROFESSIONAL EXPERIENCE

Tally Solutions Private Limited, *Software Engineering Intern*

May 2025 – August 2025

- Engineering a cross-platform application, enhancing field sales efficiency by delivering real-time borrower eligibility, CIBIL reports, and results. Implemented secure **OTP-based authentication** and session management using NodeJS, ExpressJS, MySQL, and Sequelize ORM, enabling fast and reliable access for on-the-go salespeople.
- Optimized data handling with **lazy loading**, **pagination**, and **prefetching**, significantly improving performance and usability on mobile devices. Integrated scalable FSP-backend APIs, wrote optimized SQL queries with JOINS across multiple relational tables to retrieve critical borrower and loan data, streamlining loan decision workflows for over **1,00,000+** active TallyCapital users.

ACTIVITIES - ACHIEVEMENTS

- **National Winner** at Tally CodeBrewers 2024, out of **26,000** participants nation wide.
- **Knight** on Leetcode, Global ranks of **140**, **150** and ranks 296, 896, etc in CodeChef Contests.
- **Joint Secretary**, Students Activity Council -Welfare Branch (January 2023 - June 2023). and **Founding Member**, Student Gyan Movement Club (2022 - 2024).
- One **journal paper** titled "**Medical Sensor Data Security: A DNN Framework for SOP Prediction in Two-Way Relay NOMA Systems**" ([view](#)) published under IEEE.
- Consistently ranked as the **batch topper in Mathematics** across all four semesters, covering subjects such as Linear and Non-Linear Programming, Integral Calculus, Fourier Transforms, Probability Theory, and Game Theory.

PROJECTS

[view](#) **C++ based Low-Level HTTP Server with Memory Management**

November 2024 - December 2024

- Architected an HTTP web server from the ground up using the **Simple Socket Protocol**, leveraging low-level network programming with **TCP/IP sockets** to establish IPv4-based connections using the TCP transport layer.
- Designed a modular architecture by employing **polymorphic behavior** with virtual functions, hierarchical class structures via **inheritance**, and encapsulated reusable components through header files. Ensured robust resource management with explicit socket de-allocation and dynamic memory handling to prevent descriptor leaks and **heap fragmentation**.

[view](#) **Java Based Information Retrieval with Autocomplete Functionality**

December 2024 - January 2025

- Developed a search engine with a Java-based frontend, integrating web crawling capabilities using **Depth Limited Search algorithm** to explore and index documents across websites. Utilized the **JSoup** library for parsing HTML content, enabling the extraction of meaningful text from various web pages. Utilized MySQL to store indexed data and query the top 30 documents based on keyword occurrences.
- Implemented an auto-complete functionality using an **Trigram language model**, which suggests contextually relevant terms.

[view](#) **Python Based Text Compression Application**

January 2025 - February 2025

- Implemented a lossless text compression application in Python based on the **Variable Length Huffman Coding algorithm**.
- Serialized and embedded the Huffman tree within the compressed file to enable accurate decompression without the need of auxiliary data. Achieved significant reduction averaging approximately **50-60%** in file size for plain-text inputs.

[view](#) **MERN Based Online Coding Platform with Remote Execution**

August 2024

- Seamless online compilation and execution (Java/ Javascript/C/C++) and features including syntax highlighting, customizable user profiles and code editor, user statistics, dark mode, boiler-plates codes for all languages, code auto-completion. Improved non-functional requirements such as security and scalability through **API versioning**, **data sanitization** and added security headers in the network packets.

TECHNICAL SKILLS

Languages and Big Data: C, C++, Javascript, Python, Java, Kafka, Cassandra, Hadoop, MapReduce

Tools and Frameworks: TypeScript, React, Next.js, Redux, MongoDB, MySQL, SequelizeORM, Git