

# AYUSH SINGH

MP, India

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## Education

**Jabalpur Engineering College**

**2020 – Expected 2024**

*Bachelor of Technology in Information Technology — 3rd Year Student— Current CGPA: 8.89*

*MP, IN*

## Technical Skills

**Languages & DBs:** Java, Solidity, Python, SQL, IPFS, Firebase

**Developer Tools:** IntelliJ, VS Code, Remix

**Frameworks & Technologies:** Django, Spring, web3.js, Git & GitHub, Socket and Network Programming.

**Math Stack:** Cryptography, Graph Theory, Data Structures & Algorithms

**Courses taken:** Cryptography, Computer Networks, Blockchain, DBMS, Distributed Systems-DHTs, Linux-kali, OS Basics

## Projects

**Blockchain Implementation** | *Python, Flask, REST APIs, Postman, Cryptography*

**August 2021**

- Developed a Blockchain using Python and Flask.
- It is a peer to peer direct payment system that uses proof-of-work as a consensus algorithm.
- The network has three nodes with average time of nearly 1 second to mine a new block of transactions.

**Distance Vector Protocol Implementation** | *Java, Computer Networks, Sockets, Graph Theory*

**February 2022**

- Implemented Bellman-Ford Algorithm aka Distance Vector Protocol in java.
- The project finds the shortest routing paths in a distributed network using UDP sockets, Multi-threading, and Multi-processing.

**Pastry-DHT** | *Java, Computer Networks, Distributed System, Multi-Threading, Hashing*

**April 2022**

- Implemented a Distributed Hash Table in Java.
- Pastry provides a constant look-up time( $\log(n)$ ) similar to hashtables for the files in the cluster.
- Files are stored in the form of key-value pair and can be efficiently retrieved by any node.
- The nodes are connected in a circular fashion like a normal DHT, where they can communicate with each others using in-built protocols.

**Immutable Ideas** | *Solidity, Ethers.js*

**March 2022**

- The website lets you mint your project ideas on the blockchain so that you can prove you came up with the idea.
- This was a hackathon team project, and my role was to code the backend in Solidity.
- I used SVGs to convert text to image and then stored the image as an NFT on the blockchain.
- More on this here: [Code](#) and [Demo video](#)

**Cloud Storage using IPFS** | *Solidity, IPFS, React, web3.js*

**October 2021**

- Developed a decentralized cloud storage.
- The project uses IPFS to store files on their distributed system and returned CIDs are stored on Ethereum smart contract for transparency.

## Achievements

**Specialist** on **Codeforces** with max-rating of 1500.

All India Rank of 49 in Codeforces Div2 Contest #813.

My best global ranks on Codeforces are 1032, 1410, 1732 with community contributions of +32.

Under top 50 teams in Flipkart Grid Information Security Challenge( Top 0.01% )

Solved 500+ DSA-Math problems on **GFG**, **CSES**, and Codeforces.

Was under Top 50 developers in Polkadot APAC Hackathon 2021.

## Leadership / Extracurricular

Member of Technical Writers Team @ Developer DAO

**October 2021 - Present**

Core Team member & Events @ Google Developer Society JEC

**October 2021 - Present**

Guided Juniors on How to start Competitive Programming in an ACM society event.

**August 2022**

Member @ Cryptographers

**June 2021 - Present**

A Regular Attendee of Good Hackathons.