Vishal Singhania

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EDUCATION

MANIPAL UNIVERSITY JAIPUR

Faculty of Engineering
BTech in Computer and Communication Engineering
Minor in Data Science
July 2024 | Jaipur, Rajasthan
Cum. GPA: 8.91 / 10.0 (till 5th Sem)

LINKS

Github/**SinghaniaV**
LinkedIn/**singhania-v**
Kaggle/**bigvish**
CodeChef/**big_v**
Codeforces/**BigV_**
Leetcode/**bigV_**

COURSEWORK

UNDERGRADUATE

Design and Analysis of Algorithms
Data Structures and Algorithms
Object Oriented Programming
Operating Systems
Database Systems
Computer Networks
Machine Learning*
Data Mining and Data Warehousing*
Computer Architecture
Automata Theory & Compiler Design*
Wireless Communications*
Probability & Statistics
Discrete Mathematics

*[*to be completed by May 2023]*

OPENCOURSEWARE

SKILLS

PROGRAMMING

Comfortable:
C • C++ • Python • Java
Familiar:
MATLAB • Shell (bash/posh)
HTML, CSS • JavaScript

TOOLS & LIBRARIES

Git • Flask • MySQL • Linux

INTERESTS

Algorithms • Math • Economics
Competitive Programming

PROJECTS

STOCK EXCHANGE | API, WebApp, Database

Flask | SQLite | Python | HTML, CSS | JavaScript

- A WebApp that allows logged-in users to "buy" and "sell" stocks (with pretend money) as well as look up real stock quotes fetched from **IEX API**, users can also view their stock portfolio transaction history.

WORDLE | Information Theory, Algorithm

SciPy | Python

- An implementation of the viral game Wordle (originally developed by Josh Wardle) in Python than can be played via the terminal.
- Player should guess the word in at-most six guesses. Each guess must be a valid five-letter word. The color of the tiles will change to show how close your guess was to the word.
- Using dataset of 13k five-letter words, implemented an **algorithm** that solves any wordle game in at-most six guesses, from Grant Sanderson's entropy idea which uses **information theory** to guess the next best word.

ENCRYPTED CHAT | Cryptography, Networks

Socket | RSA (Rivest Shamir Adleman) | Python

- A CLI peer-to-peer (P2P) Chat App which uses **Asymmetric-Key** cipher to send and receive messages.
- One user (node) listens on a port number at an IP address, while the partner (node) reaches out to form a connection using a connection-oriented **transmission control protocol (TCP)**.

PASSWORD MANAGER | Cryptography

Fernet | Python

- A CLI Password Manager to encrypt-&-store passwords using **Symmetric-Key** cipher.
- The user can **save** and **retrieve** passwords locally using their **master password**.

JACK TOOLCHAIN | (ongoing)

C++

- Following the guidelines of Nand2Tetris, implementing the Jack Compiler in C++.
- Implementing a two phase recursive descent Compiler with first phase converting to intermediate virtual machine code, and second phase converting to assembly and an assembler to translate this assembly to binary.

NEURAL NETWORKS | Minor Project (ongoing)

Python

- Implementing **Neural Networks** from scratch in Python and will be training it to recognize handwritten texts.

ACHIEVEMENTS

2023	**3 star (Div. 2)**	Highest **rating of 1600** on CodeChef
2023	**Global Rank of 293**	CodeChef Starters 75
2023	**Global Rank of 356**	CodeChef Starters 76
2022	**Global Rank of 946**	Codeathon organized by IIT BBS
2022	**Qualified Round 1**	ACM Semi Code (an Institute level Codeathon)
2021	**Open Source**	Contribution recognized in **Hacktoberfest**