

Vishal Singhanian

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EDUCATION

MANIPAL UNIVERSITY JAIPUR

Faculty of Engineering

BTECH IN COMPUTER AND

COMMUNICATION ENGINEERING

MINOR IN DATA SCIENCE

Aug 2024 | Jaipur, Rajasthan

Cum. GPA: 8.91 / 10.0 (till 5th Sem)

LINKS

Github/[SinghanianV](#)

LinkedIn/[singhanian-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

(Google Drive link to Certifications)

SKILLS

PROGRAMMING

Comfortable:

C • C++ • Python • Java

MySQL

Familiar:

MATLAB • Shell • Git

HTML, CSS • JavaScript

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 | CLI APP, INFORMATION THEORY, ALGORITHM

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 four guesses, from **3b1b'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** (public-private key pair) encryption algorithm to send and receive messages.
- One user (node) listens on a port number at an IP address, while the partner (node) reaches out (by entering IP and port) to form a connection using a connection-oriented **transmission control protocol (TCP)**.

PASSWORD MANAGER | CRYPTOGRAPHY

Fernet | Python

- A CLI Password Manager to encrypt-and-store passwords using **Symmetric-Key** encryption.
- 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

- Building **Neural Networks** from scratch in Python and will train it to recognize handwritten texts.

ACHIEVEMENTS

2023 **3 star (Div. 2)**

2023 **Global Rank of 293**

2023 **Global Rank of 356**

2022 **Global rank of 946**

2022 **Qualified Round 1**

2021 **Open Source**

Highest **rating of 1600** on CodeChef

CodeChef Starters 75

CodeChef Starters 76

Codeathon organized by IIT BBS

ACM Semi Code (an Institute level Codeathon)

Contribution recognized in **Hacktoberfest**