

Vishal Singhanian

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EDUCATION

MANIPAL UNIVERSITY JAIPUR

Faculty of Engineering
BTECH IN COMPUTER &
COMMUNICATION ENGINEERING
MINOR IN DATA SCIENCE

July 2024 | Jaipur, Rajasthan
Cum. GPA: 8.72 / 10.0 (till 7th Sem)

SKILLS

PROGRAMMING & SCRIPTING

C • C++ • Python • Bash • SQL
R • MATLAB • Java • Golang

TOOLS & FRAMEWORKS

Backend & Databases:

Docker • Git • Kafka • Postman
RabbitMQ • Django • Flask • FastAPI
PostgreSQL • MongoDB • Redis

Data Science & Machine Learning:

SciPy • Pandas • NumPy • NLTK
Matplotlib • scikit-learn • TensorFlow

COURSEWORK

UNDERGRADUATE

Design & Analysis of Algorithms
Data Structures & Algorithms
Object Oriented Programming
Operating Systems
Database Systems
Computer Networks
Data Mining & Warehousing
Artificial Intelligence & Deep Learning
Big Data Analytics
Information Retrieval
Blockchain Technologies
Probability & Statistics
Discrete Mathematics

OPENCOURSEWARE

Graph Algorithms by UC San Diego
CCNAv7: Intro to Networks by Cisco
Programming in Python by Python Institute
C++ Specialization by UIUC

LINKS

COMPETITIVE PROGRAMMING

CodeChef/[big_v](#) • Codeforces/[BigV_](#)
Topcoder/[BigV_](#) • AtCoder/[BigV](#)

PROFILES

Github/[SinghanianV](#) • Leetcode/[bigV_](#)
Kaggle/[bigvish](#) • LinkedIn/[singhaniav](#)

PROJECTS

CONDUIT

FastAPI | MongoDB | Python

BACKEND + DATABASES

- Backend logic implementation of a dynamic social blogging platform like *Medium.com*, influenced by the [RealWorld](#) GitHub initiative.
- API Specifications and Features:**
 - User Authentication* using *JWT* for secure access.
 - User Management*: Create, update, delete user profiles.
 - Article CRUD*: Create, retrieve, update & delete articles with details.
 - Commenting*: Leave, view, and delete comments on articles.
 - Favorite Articles*: Mark articles as favorites.
 - Follow/Followers System*: Connect users through following/unfollowing.
 - Pagination* for efficient listing of articles.
- Testing Framework:**
 - Unit Testing*: Tested individual components with *mock dependencies*.
 - Integration Testing*: Ensured smooth interaction between components.
 - API Testing*: Automated API tests for responses, status codes, and data integrity.
 - Edge Case* and *Security Testing*: Validated edge cases and security measures.
- Continuous Integration (CI) and Continuous Deployment (CD)**: (*upcoming*)

WATSON X

NLTK | Python

MACHINE LEARNING + NATURAL LANGUAGE PROCESSING

- Built a question answering system similar to [IBM Watson](#). It operates on a corpus of text documents and aims to find the most relevant documents and passages to a given query.
- For document retrieval, the system uses *tf-idf (term frequency-inverse document frequency)* to rank them based on the frequency of query terms and their overall importance in the corpus.
- Passage retrieval is performed by subdividing the top document(s) into sentences. In scoring the passages, the system employs a combination of *inverse document frequency* and a *query term density* measure.

NAND 2 TETRIS

HDL | Assembly | C

OPERATING SYSTEMS + COMPILERS + ARCHITECTURE

- Following the guidelines at [Nand2Tetris](#), implemented a fully functional computer from scratch (*software hierarchy + hardware platform*).
- The hardware platform involves implementing the *elementary logic gates* using an *HDL*. Then, a *CPU*, and a *RAM* chip from combinational & sequential logic.
- The software hierarchy involves implementing a *high-level language*, a *compiler*, a *Virtual Machine translator* to translate the compiled code to machine language, then an *assembler* to translate it to binary, and finally, a basic *operating system* that closes gaps between the high-level language and the underlying hardware platform.

ACHIEVEMENTS

2023 3 star (Div. 2)
2023 India Rank of 4944
2023 Global Rank of 293
2023 Contributor
2022 Global Rank of 946
2022 Qualified Round 1
2021 Merged Pull Requests
2021 Contributor

Peak **rating of 1630** on CodeChef
Google's **Code Jam** Round A
CodeChef Starters 75
Kaggle (a data science competition platform)
Code-a-thon organized by IIT BBS
ACM Semi Code (an Institute level Code-a-thon)
Contribution recognized in **Hacktoberfest**
to Wikipedia articles through an **Edit-a-thon**