

Umang Garg

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Education

Indian Institute of Technology (BHU), Varanasi

Dec 2021 – Present

B.Tech in Electronics and Communication Engineering

CGPA: 7.74

Parshuram Govt. Senior secondary school, Salempur Khurd, Weir

June 2021

Class 12

Percentage – 93.20

Technical Skills

Languages: C, C++, Python

Tools and Libraries: Numpy, Pandas, Tensorflow, Git.

Area of Interest: Competitive programming, Data Structure and Algorithms, Machine Learning

Projects

Diagnosis of patient's lung condition - detection of crackles and wheezes

- Utilized the **Librosa** library for analysing and processing the audio signals. Using this library, the audio files are converted into visual representation as Spectrograms.
- Implemented a **CNN** model, which receives an input image which is basically a spectrogram of audio signals and predicts the presence of Wheezes and Crackles as an output
- Trained the CNN architecture model on the dataset including audio files and text files and got Binary cross entropy loss of **0.50**, AUC value of **0.78** and Accuracy of **0.89** on the training dataset
- Exposure:** Python, Numpy, Pamdas, Keras, Tensorflow, CNN.

Huffman encoding based file compression

- Developed an efficient data compression tool using the **Huffman encoding algorithm**, reducing the file sizes while preserving data integrity.
- Implemented the compression and decompression in C++, optimizing for performance and memory usage.
- Exposure :** Huffman encoding algorithm, File handling

Sorting visualizer

- Designed and implemented a sorting visualizer project using Python, showcasing proficiency in algorithms and visualization techniques.
- Exicuted three prominent sorting algorithms : **Selection sort**, **Insertion sort** and **Bubble sort**, demonstrating a solid grasp of algorithmic concept.
- Exposure :** Python, Pygame, Various sorting algorithms.

Achievements

- Secured **All India Rank 4038** in JEE Advanced 2021.
- Secured global rank **243** in division 3 of codechef starter 90.
- 3 star** on Codechef with max rating **1760**
- Pupil** on codeforce with max rating **1387**
- Secured rank **15** in CODIGO, a Competitive Programming event of Prastuti'23.
- Secured goble rank **2017** in division 2 of codeforces round 904.

Leadership / Extracurricular

Udyam'23

Nov 2022 – April 2023

Marketing co-coordinator

IIT BHU

- Served as marketing co-coordinaor in udyam'23
- Contacted various companies for sponsorship for the event.

Udyam'24

Nov 2023 – Present

Publicity coordinator

IIT BHU

- Served as publicity coordinaor in udyam'24
- Maximized the event visibility by various social media campaigns and physical activities