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SUMMARY

I am a 4th year Bachelor of Technology student at Delhi Technological University, New Delhi, India. I possess Machine Learning and Artificial Intelligence skills and their implementation in the field of research. I completed courses in Machine Learning, Deep Learning, and Computer Vision during my Bachelor's Degree. I am currently studying Data Structures, Object-oriented programming, and Neural Networks as a part of my curriculum. I have previously worked on various Machine Learning projects and publications. I have significant experience as an intern in two different research labs in India. I also work as a Departmental Visiting Student at the Department of Computer Science and Technology, University of Cambridge.

EDUCATION

Bachelor of Technology Major - Engineering Physics Minor - Machine Learning	2020-2024	Delhi Technological University, New Delhi, IN	8.72 (CGPA)
Senior Secondary Education	2020	Vishal Bharti Public School	91.8 %

TECHNICAL SKILLS

C, C++, Python, SQL	Machine Learning, Deep Learning, Federated Learning, Continual Learning	Git, Tensorflow, PyTorch, Keras, Linux, Unity, BASH
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EXPERIENCE

Visiting Student, Affective Intelligence and Robotics Lab, University of Cambridge March 2023- Present

- Working on **Federated Continual Learning** on Socially Aware Robots under the guidance of **Professor Hatice Gunes** at the Department of Computer Science and Technology, University of Cambridge.
- The study revolves around the MannersDB dataset to identify possible tasks for a robot using images.

Research Intern, Indian Institute of Technology, Delhi January 2024–Present

Researcher, Big Data and Web Analytics Lab, Delhi Technological University December 2020- Present

- We developed a novel architecture for identifying the type of malware using executable binary files using Machine Learning under the guidance of **Professor Dr. Rahul Katarya**.
- Developed a **fake news detection system** using the feature selection algorithm. The study was published in the **Institute of Electrical and Electronics Engineers(IEEE) access journal**.
- I completed a review study on intrusion detection using artificial intelligence algorithms, which was accepted and presented at the IEEE International Conference on **Electrical Electronics Communication and Computers**.
- Currently working on a research study to develop a novel model to detect the personalities of individuals from bilingual handwritten texts using Machine Learning techniques and Building an end-to-end novel fish species classification system using computer vision and machine learning.

Research Intern, Indian Institute of Technology, Dharwad May 2022- July 2022

- I trained a federated machine learning setup under the guidance of Dr. Bharath B N to optimize edge caching in 5G mobile networks using machine learning algorithms.
- Gained knowledge about **flower architecture and federated learning** in detail.

ML/AI Intern, HearUS (<https://hearus.me/>) January 2022- March 2022

- Developed Machine Learning-based algorithms from scratch to identify different emotions of patients from their chats, which was further integrated with their chatbot.

PUBLICATIONS

Fake News Detection System Using Featured-Based Optimized MSVM Classification - *Institute of Electrical and Electronics Engineers (IEEE) Access* | Digital Object Identifier - [10.1109/ACCESS.2022.3216892](https://doi.org/10.1109/ACCESS.2022.3216892) October 2022

- Developed a fake news detection system using feature selection algorithms on ten famous datasets, including Politifact, GossipCop, etc. The study proposes a better-automated method to prevent the spread of fake news over social media.
- SCI Indexed; Impact Factor - 3.9**

Solar Panels Crack Detection using Overhead Images - *International Journal for Research in Applied Science and Engineering Technology (IJRASET)* | Digital Object Identifier - [10.22214/ijraset.2021.38532](https://doi.org/10.22214/ijraset.2021.38532) October 2021

- Developed a Machine Learning model to **detect cracks on solar panels using overhead images with 95.34% accuracy**. This can help automate detecting faults in specific panels and replace them in time.
- The project was submitted as a mandatory project for the subject of Engineering Mechanics.

Convolutional Network-based Face Mask Detection - *World Journal of Advanced Research and Reviews (WJARR)* | Digital Object Identifier - [10.30574/wjarr.2022.13.2.0142](https://doi.org/10.30574/wjarr.2022.13.2.0142) April 2022

- To monitor public places during COVID-19, this paper proposes an ensemble-based convolutional neural network with an accuracy of **99.5%**, which can be used to detect from their images whether a person is wearing a face mask or not.

MANUSCRIPTS SUBMITTED

DIMC: DenseNet and InceptionV3 based Malware Classification - *Mobile Networks and Application (Springer Nature)* | July 2023
UNDERGOING REVIEW

- The manuscript of the novel architecture for identifying **25 different malware** categories is currently being reviewed in **Springer Nature**. The study aims to provide a better and faster model for classifying malware using executable binary images.
- The research concludes a novel pipeline with 98.20% accuracy in the classification of Malware using the MaleVis dataset while 99.14% in the Mallmg dataset
- **SCI Indexed; Impact Factor - 3.8.**

A Comparative Study on Data Augmentation-based Crystal Structure Classification of Perovskite Oxides using Machine Learning - *Computational Condensed Matter (Science Direct)*
UNDERGOING REVIEW

September 2023

- Study on crystal structure classification for **ABO₃ type perovskites**. It proposes a Data Augmentation based pipeline and machine learning techniques to classify the structures. The best accuracy achieved during the study was **94% accuracy**.
- The article is part of a bachelor's major project under the supervision of Dr. Deshraj Meena.
- **SCI Indexed; Impact Factor - 2.1.**

CONFERENCES ATTENDED

IEEE International Conference On Electrical Electronics Communication and Computers, 26 - 27 August 2023 | [Certificate](#)

- The review paper on detecting intrusion using Machine Learning and Deep learning techniques was accepted at the International Conference.
- The study will be indexed in **IEEE Xplore Digital Library**

ACADEMIC PROJECTS

Brain Tumor Segmentation — *Machine Learning* | [Github Link](#) | [Medium Link](#)

- This project presents the implementation of two Deep Learning models (UNet and LinkNet) for segmenting brain tumors using the images available in a dataset on Kaggle. These accurate automatic algorithms for segmenting brain tumors can improve disease diagnosis and treatment planning and enable large-scale pathology studies.
- Technologies Used - Computer Vision, Machine Learning, Supervised Learning

E-Commerce Product Recommendation System — *Machine Learning* | [Github Link](#) | [Medium Link](#)

- Using the titles of various fashion products, this project implements Natural Language Processing algorithms to recommend products to customers. This system can be used in e-commerce platforms to give customers the best recommendations on what they might be willing to buy.
- Technologies Used - Natural Language Processing, Deep Learning, Unsupervised Learning

NATIONAL LEVEL ACHIEVEMENTS AND PARTICIPATION

- Finalist (Top 10) in Toycathon 2021, organized by the All India Council of Technical Education(AICTE) and the Ministry of Education. | [Certificate](#)
- Won the internal round and finalist at Smart India Hackathon-22 organized by All India Council of Technical Education | [Certificate](#)

POSITION OF RESPONSIBILITIES

President and Machine Learning Mentor, Round Table, Delhi Technological University July 2022- July 2023

- **Lead a technical society of over 300 members** during the academic year of 2022-23.
- Under my leadership, the society completed various projects and organized national-level events with a total of more than 800 participants throughout the year.
- As a senior mentor, I guided around 100 students in machine learning and artificial intelligence.