

Academic Qualifications

Year	Degree/Certificate	Institute	CGPA/ %
2021 - Present	B.Tech in Agricultural and Food Engineering and M.Tech in Entrepreneurship Engineering	Indian Institute of Technology, Kharagpur	8.20/10
2021	Class XII (CBSE)	St.Edmunds Public School	85%
2019	Class X (CBSE)	Maheshwari Public School	89.4%

Internships

AI Intern | Assisto

May 24 - Present

Object Detection and Counting for Barista

- Objective: Enhance the performance of object detection systems in barista environments to achieve higher accuracy
- Developed dataset by **extracting frames** from barista CCTV footage & combining with open source dataset, augmented it using Roboflow
 - Fine-tuned **YOLOv8** model for Object detection, leading to a remarkable **15%** increase in accuracy over the previous baseline model
 - Developed an advanced object counting algorithm using the solutions class of **Ultralytics** for consistent object **Counting** and **reporting**

Text to Speech integrated with Voice Cloning

- Objective: Optimize TTS model performance and integration to achieve advanced voice cloning capabilities effectively
- Fine-tuned a TTS model for **13** Indian languages, achieving a **5%** reduction in CER for Hindi Language enhancing model intelligibility
 - Developed robust pipeline integrating the fine-tuned TTS model with **OpenVoice** for advanced, high-quality voice cloning capabilities
 - Successfully deployed & efficiently managed the TTS model on **AWS EC2** instances, first dockerizing the model, ensuring scalability

Projects

Trumio.AI | Inter IIT Tech Meet 12.0 Madras

Oct 23 - Dec 23

- Objective: *Develop KPIs for the work collaboration platform to speed up individual selections for projects with relevant skills*
- Engineered an advanced GitHub and resume scoring system using the **Flan T5 model** for comprehensive data aggregation and analysis
 - Implemented vector embeddings with **Text Embedding ADA-002** model for enhanced language proficiency assessment & ranking
 - Developed an **adaptive learning system** that dynamically adjusts test difficulty based on real-time user performance data
 - Integrated automated **Cron jobs** with **News API** to curate and deliver industry-specific insights, enhancing relevance for platform users

Image Compression using Quadtrees Self Project

Dec 23 - Jan 24

- Objective: *Create a highly efficient image compression system that reduces file size while maintaining visual quality.*
- Implemented **recursive subdivision** based on pixel similarity, using Python for building **Quadtrees** and **OpenCV** for image processing
 - Achieved a remarkably high compression ratio ranging between **0.12 and 0.68**, optimizing compression and preserving visual quality
 - Optimized algorithm performance through **parallel processing**, resulting in a **40%** reduction in compression time for large images

SoundAnalyzr — Self Project

Apr 24 - Jun 24

- Objective: *Develop an intelligent audio analysis tool for transcription, linguistic insights, and interactive content exploration*
- Developed AI-powered voice analysis with **Deepgram** for speech recognition, created searchable transcripts & interactive audio controls
 - Enhanced NLP with **Compromise** for text processing & sentiment analysis using **AFINN-165** wordlist to improve transcript understand
 - Built responsive UI with **Next.js**, integrated **wavesurfer.js** for audio visualization, **react-tagcloud** for word clouds & react-drag-drop-files

Skills and Relevant Course Work

- Languages / Libraries:** C | C++ | Python | MATLAB | HTML | CSS | JavaScript | MySQL | Numpy | Pandas | Matplotlib | TensorFlow | Keras | Scikit-learn | Seaborn | Scipy | PyTorch | Ultralytics | Librosa | OpenCV
- Frameworks / Libraries / Tools :** Git | Github | VScode | Jupyter Notebook | Power BI

COURSEWORK INFORMATION

Programming and Data Structures | Probability and Statistics | Partial Differential Equations | Data Structure & Algorithms | The Web Developer BootCamp | DL specialization | Foundations of Entrepreneurship | Economics | Application of ML in Agricultural practises.

Awards and Achievements

- Secured a rank amongst **top 5.0%** out of 2 Lakh candidates in **Joint Entrance Examination Advanced, 2021**
- Secured a rank amongst **top 1%** out of 12 Lakh candidates in **Joint Entrance Examination Mains, 2021**
- Squash GC 2022: Secured 1st position in the Inter-hall Squash Tournament out of 19 teams in the General Championship 2022-23
- Squash GC 2023: As Captain secured 3rd position in the Inter-hall Squash Tournament out of 21 teams in the GC 23-24
- Aavhan 23: Represented IIT Kharagpur in the IIT Bombay Aavhan 23 Squash Tournament, achieving a runner-up position

Positions of Responsibility

Associate Member | Institute wellness group, IIT Kharagpur

Feb 22 – Oct 22

- Developed and honed valuable skills in comprehensive planning, meticulous organization, and effective management of events.
- Successfully executed events promoting mental and social awareness, enhancing project management and logistical capabilities.

Secretary | Agricultural Engineering Society

Feb 22- April 23

- Developed expertise in acquiring strategic sponsorships for major events like PRAKRITI, successfully identifying and securing sponsors
- Coordinated sponsor tasks, timelines, and deliverables to ensure smooth integration and successful execution in major events