Tejeswar Pokuri

Passionate Engineer leveraging Machine Learning and Deep Learning techniques to solve real-world challenges

Email | 9505437075 | Linkedin | Github | Website

EDUCATION

Manipal Institute of Technology, Manipal | *B.Tech Computer Science* **2022-2026**

- CGPA: 9.44

EXPERIENCE

RUGVED Systems

AI-Research Head Aug 2024 – Present

- Leading a team of 15 AI researchers in autonomous robot development and research for top-tier conferences.
- Achieved recognition with research papers accepted at NeurIPS 2024, IEEE ACCESS (Q1) and ACCV 2024.

AI Member May 2023 – July 2024

- Worked on human anomaly detection in outdoor regions, auto navigation system for visually impaired.
- Directed a team of 4 in the OpenCV AI Competition 2023, showcasing leadership and teamwork skills.
- Mentored 10 juniors in the basics of machine learning, EDA, OpenCV, Python and Deep Learning.
- Researched on AI in aerospace, now focused on Spacecraft Pose Estimation and Dehazing images.

TensorGo Technologies

Computer Vision Intern May 2024 – July 2024

- Contributed to crowd counting, footfall analysis, lip syncing, video news analytics and data analysis projects.
- Achieved an impressive accuracy of 85% accuracy in news video analysis, combining multiple deep learning models and Quantized Computer Vision Models, significantly reducing the inference time by 70% on CPU.
- Worked extensively on YOLO, Whisper, Wav2Lip, P2PNet, and innovative Video Moment Retrieval models.

PROJECTS

Guiding Gaze | *Project Page*

- Crafted an Navigation System to assist the visually impaired, integrating features like Obstacle Detection, Depth Estimation, Scene Recognition, Barrier Detection, Facial Recognition, and Navigation capabilities.
- Custom YOLOv7 (mAP 0.76) trained common obstacles present in household, road, and stairs. MIDAS for depth, VGGFace for facial recognition, EffNetB2 for scene recognition (12 classes, F1 score 0.91), used MapQuest API for directions. Attained realtime navigation using Nvidia GeForce GTX 1650 GPU.

Blue Bird | *Project Page*

- Hotel automation software streamlines the management of hotel operations, automating tasks such as room booking, guest management, and service requests to enhance efficiency and improve guest experience.
- It is improved upon open-sourced Hotel Automation Software featuring a user-friendly GUI, integrated chat-bot, security surveillance system, and advanced data analytics, powered by PHP and MySQL.

Cine App | *Project Page*

- Designed and implemented a movie booking system with a user-friendly Tkinter GUI, leveraging SQLite3 as the database for seamless functionality.
- Developed a custom 3NF-compliant database structure and incorporated triggers to enhance performance and maintain data integrity.

Project Garuda | *Project Page*

- A smart surveillance system for effectively detecting human anomalies, and Achieved an accuracy of 80%.
- Utilized Mediapipe to detect anomalies such as running, crawling, and integrated this system into a website.

ACHIEVEMENTS

Top 7 Finalist at International OpenCV AI Competiton 2023 — International
- The only Indian undergraduate team to rank in the top 7 among 500+ teams.

National Finalist at JP Morgan Code for Good Hackathon 2024 — National
- National Finalist at code for good hackathon out of 15000+ students.

Top 15 at Goldman Sachs India Hackathon 2024 — National
- Top 15 (Finalist) at GSIH out of 7500+ students.

Amazon ML Summer School 2024 — National
- Chosen from a pool of over 12,000 applicants nationwide.

Achiever Scholar Receipt — College level
- Ranked in the top 5% of my department and awarded a 20% merit-based scholarship.

Runner Up at iACT 2023 — National
- Runner Up in project presentation conducted by ISA banglore section.

Winner at Investigar 2023 — College level
- Winner at paper presentation competition, out of 30+ students.

PAPERS AND PUBLICATIONS

Masked Self-Supervised Pretraining for Dental Radiograph Segmentation
- Accepted at Self-Supervised Learning Workshop, NeurIPS 2024.

Detection of Epilepsy Disorder Using Spectrogram Images Generated from Brain EEG Signals
- Accepted at IEEE ACCESS (Q1).

IncepDehazeGAN: Novel Satellite Image Dehazing
- Accepted at Computer Vision for Developing Countries Workshop, ACCV 2024.

A Critical Analysis of Artificial Intelligence Integration and Future in Aerospace Engineering
- Accepted at GCAAMS 2024.

SKILLS

Competitive Programming: Solved 100+ problems in leetcode and 50+ problems in codeforces

Course Work: Object Oriented Programming, Data Structures and Algorithms, Database and Management Systems, Basic Operating Systems, Basic Software Design

Programming Languages: Python , C , C++ ,Java, HTML, CSS, Java Script

Frame Works: React

Libraries: TensorFlow, PyTorch, OpenCV, NumPy, Pandas, Matplotlib, Scikit-learn

Tools:Basic Docker, Linux, Deepstream, Generative AI

Soft skills : Team work, Problem solving, Innovation, Communication