

Ananya Vivek Kulkarni

+91 7802032289 ananyakulkarni2103@gmail.com ananya-kulkarni-609213244
ananya12k ananyakulkarni1203 Google Scholar



EDUCATION

2021 - 2025 **B.Tech, Dharmsinh Desai University** in Information Technology (CGPA: 8.68/10.0)

WORK EXPERIENCE

- AI/ML Intern** — iHub-Data, IIIT Hyderabad Jun'25 – Present
Supervisor: Mr. Govind Krishnan
Working on the design and deployment of deep learning models for adverse weather removal under the Mobility initiative at INAI, with a current focus on developing a lightweight model using knowledge distillation for real-time inference.
- Research Intern** — Space Applications Centre, ISRO Dec '24 – Apr '25
Supervisor: Dr. Bipasha Paul Shukla
Developed a radiative transfer emulator using ML models to emulate greenhouse gas behavior (CO₂, CH₄) for climate studies; reduced inference time from over 15 minutes (traditional methods) to just 0.02 minutes per scenario while preserving spectral accuracy. Created large-scale dataset of 9TB processed it for Machine Learning Algorithms.
- Research Intern** — Defence Institute of Advanced Technology (DU), DRDO May '24 – Jul '24
Supervisor: Dr. Amrita Nighojkar
Built and evaluated LSTM and RNN models achieving 92%+ accuracy in detecting leaks in simulated maritime pipeline data; co-authored a review paper on AI-based leak detection techniques.

TECHNICAL PROJECTS

- Car Detection in Low Visibility** Jul '24 – Oct '24
Python, OpenCV, YOLOv8, DeepSORT
Built a real-time vehicle detection system for foggy conditions by combining DCP and CLAHE for contrast enhancement with YOLOv8 and DeepSORT for robust tracking; improved visibility by 85% with 1-2s processing lag.
- Jigsaw Puzzle Solver Utilizing Self-Supervised Learning** May '24 – Present
PyTorch, Pascal VOC, Self-Supervised Learning
Developing a self-supervised model to solve jigsaw image puzzles. Generated a domain-agnostic dataset from Pascal VOC and trained contrastive embeddings to capture features, with a Streamlit UI currently in progress.
- Student Info Tracker Web App** Dec '23 – Mar '24
Django REST, React, SQL
Built a full-stack platform for student services (PGs, hostels, tiffin); implemented REST APIs and a responsive UI. Tested by 50+ students for usability and feedback.

SKILLS SUMMARY

Languages & Web Dev:	Python, C++, SQL, Java, R, LaTeX, Django, React JS, FastAPI, HTML, CSS, JavaScript
Machine Learning & Deep Learning:	Scikit-Learn, TensorFlow, PyTorch, OpenCV, NLTK, Pandas, NumPy, Matplotlib
Data Tools & MLOps:	Streamlit, MLflow, Docker, Kubernetes, Jenkins, Git, GitHub, CI/CD Pipelines
Databases:	PostgreSQL, MySQL, MongoDB
Soft Skills:	Team Collaboration, Problem Solving, Time Management, Leadership

RESEARCH & PUBLICATIONS

- SMART NOTE:::BOOK: Raspberry Pi-Driven Affordable Image-to-Braille Converter** Feb '23 – Nov '23
IoT + OCR + Assistive Tech — Under Asst. Prof. Viral H. Shah
Developed an IoT-based image-to-Braille converter for low-resource schools. First author of paper published in *Springer CCIS, 2024*; won **Best Paper Award** at ASCIS 2023. Filed Indian patent 202421066714 for a real-time Braille system with AI captioning.
- Development of Marathi Language Parser** Oct '23 – Sep '24
Computational Linguistics + Finite Automata — Under Asst. Prof. Deepak Vegda
Created a rule-based parser to model gender agreement in Indo-Aryan languages. First author of accepted paper at ERCICAM 2025 conference (presented in March 2025).
- Car Detection in Low Visibility (Fog)** Jul '24 – Oct '24
Computer Vision + Real-Time ML — Accepted at OTCON 4.0
Built a fog-resistant vehicle detection pipeline using DCP, CLAHE, YOLOv8, and DeepSORT. Achieved robust real-time inference; presented at OTCON 2025 conference in April 2025.

HONORS AND AWARDS

- Best Paper Award**, ASCIS 2023 Conference — For work on Braille accessibility using Raspberry Pi and OCR Dec 2023
- SSIP Grant Recipient**, Govt. of Gujarat — Secured 35,700 for developing SMART NOTE:::BOOK Feb 2023