

Kondapally Madhavi

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Hyderabad, Telangana State - 502284, India

RESEARCH INTERESTS

- Enhancing Autonomous Vehicle Technology in Transitional Weather Conditions
- Causal Interventional Training for Autonomous Vehicle Technology in Transitional Weather Conditions
- Developing Vision Language Models for Advanced Driver Assistance Systems
- Applying Vision LLMs for Medical AI Applications

ACADEMIC BACKGROUND

- **Indian Institute of Technology Hyderabad (IIT Hyderabad)** Aug 2021 - Now
Hyderabad, India
Doctor of Philosophy (PhD)
 - **Department:** Computer Science & Engineering
 - **Thesis:** Scene Perception for Autonomous Vehicle Technology in Transitional Weather Conditions
 - **Supervisor:** Prof. C Krishna Mohan
 - **CGPA:** 9.25/10.00
- **Jawaharlal Nehru Technological University, Hyderabad, India (JNTU Hyderabad)** Sep 2008 - Dec 2010
Hyderabad, India
Master of Technology (MTech)
 - **Department:** Computer Science & Engineering
 - **Thesis:** Locating friends and family using GPS
 - **Percentage:** 73 %
- **Kakatiya University, Warangal, India** June 2002 - Apr 2006
Warangal, India
Bachelor of Technology (BTech)
 - **Department:** Information Technology
 - **Percentage:** 73 %

PUBLICATIONS

C=CONFERENCE, J=JOURNAL, W=WORKSHOP, S=SUBMISSION

- [J.1: IEEE T-ITS] Kondapally Madhavi, K. Naveen Kumar, C. Krishna Mohan, **Towards a Transitional Weather Scene Recognition Approach for Autonomous Vehicles.** *IEEE Transactions on Intelligent Transportation Systems*, Vol. 25, Issue 6, pp. 5201-5210, 2024. [IF: 8.5]
- [J.2: Elsevier PR] Kondapally Madhavi, K. Naveen Kumar, C Gayathri, **TWFNet: Introducing Transitional Weather Conditions for Autonomous Driving with a Spatio-temporal Forecasting Network.** *Pattern Recognition* (Elsevier), pp. 112-154, 2025. [IF: 7.6]
- [C.1: WACV] Kondapally Madhavi, K. Naveen Kumar, C. Krishna Mohan, **CaRS: A Causal Intervention Segmentation Framework and Benchmark Dataset for Autonomous Driving under Transitional Weather Conditions.** *Winter Conference on Applications of Computer Vision (WACV) 2026*, Arizona, USA.
- [C.2: IJCNN] Kondapally Madhavi, K. Naveen Kumar, C. Krishna Mohan, **Object Detection in Transitional Weather Conditions for Autonomous Vehicles.** In *International Joint Conference on Neural Networks*, pp. 1-8. IEEE. June, Yokohama, Japan 2024
- [C.3 Springer] RaviKiran Ramaraju, Kondapally Madhavi, G. Ravi, **Sentimental Analysis on Twitter Data Using Hadoop with Spring Web MVC.** *Intelligent System Design. Advances in Intelligent Systems and Computing* (Springer Nature), vol 1171. Springer, Singapore, pp. 265–273, 2020
- [W.1: ICPR] Kondapally Madhavi, K Naveen Kumar, C Krishna Mohan, **TransWardX: An Explainable Black-box Object Detection Attack for Autonomous Driving in Transitional Weather Conditions,** *International Conference on Pattern Recognition. Cham: Springer Nature Switzerland, 2024. Lecture Notes in Computer Science, vol 15619.*
- [W.2: IEICE] Kondapally Madhavi, C Krishna Mohan, **Weather Scene Perception for Autonomous Vehicles.** In *International Workshop on Computer Vision and Artificial Intelligence, IEICE proceedings*, Japan, pp.61-64
- [S.1: TMLR] Kondapally Madhavi, K. Naveen Kumar, C. Krishna Mohan, **Eyes on the Road, Words in the Changing Skies: Vision-Language Assistance for Autonomous Driving in Transitional Weather.** *TMLR*
- [S.2: CVPR] Kondapally Madhavi, K. Naveen Kumar, C. Krishna Mohan, **TransWeatherNet: End-to-End Restoration Framework and Benchmark for Robust Autonomous Vehicle Perception under Transitional Weather Conditions.** *CVPR 2026*

PATENTS

- **Kondapally Madhavi, K Naveen Kumar, C Krishna Mohan, Sobhan Babu, "System And Method For Performing Adaptive Object Detection In An Autonomous Vehicle System"**, Indian Patent No. 572776. Indian Patent Office. Filed Jan 7, 2025. Granted Oct 28, 2025. Application No. 202541001505.
- **Kondapally Madhavi, K Naveen Kumar, C Krishna Mohan, Sobhan Babu, "System and method for generating weather transition data for autonomous vehicle training"**, Indian Patent Office, Application no. 202541000718, Jan, 03, 2025

TEACHING EXPERIENCE

- **B.V. Raju Institute of Technology, Narsapur (BVRIT Narsapur)** *Feb 2015 - Aug 2021*
Hyderabad, India
Assistant Professor
 - **Department:** Information Technology
- **Marri Laxman Reddy Institute of Technology (MLRITM Hyderabad)** *Dec 2011- Oct 2012*
Hyderabad, India
Assistant Professor
 - **Department:** Computer Science and Engineering
- **TRR Engineering College (TRREC, Hyderabad)** *Dec 2010 - Dec 2011*
Hyderabad, India
Assistant Professor
 - **Department:** Computer Science and Engineering

FUNDED PROJECTS

- **Medicine from the sky** *Sep 2021 - Dec 2021*

Project title: Design and Development of AI-based real-time light-weight system medical drone delivery

- **Funded by:** Bold and Unique Ideas Leading to Development (BUILD), IITH

- **Amount:** INR 100000 for 4 months

- **Role:** Team member

TECHNICAL SKILLS

- Machine learning, deep learning, supervised and unsupervised learning, and computer vision
- **Programming & Libraries:** Python, TensorFlow, PyTorch, and OpenCV

ADDITIONAL INFORMATION

- **Teaching Assistant** for the below courses offered by Prof. C Krishna Mohan (PhD supervisor) at IIT Hyderabad
 - * CS6450 - Visual Computing
 - * CS6140 - Video Content Analysis
 - * CS6170 - Computer Vision for Autonomous Vehicle Technology
 - * CS6870 - Surveillance Video Analytics
- **External Reviewer**
 - * IEEE International Joint Conference on Neural Networks (2024)
 - * IEEE Intelligent Transportation Systems Conference (2024)
 - * Elsevier Neurocomputing (2023)
- Student member of International Neural Network Society (INNS)

REFERENCES

1. Dr. C Krishna Mohan (PhD Supervisor)

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1. Dr. Sobhan Babu

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1. Dr. Sumanth Yenduri

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