

# 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  
*Doctor of Philosophy (PhD)* Hyderabad, India
  - **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  
*Master of Technology (MTech)* Hyderabad, India
  - **Department:** Computer Science & Engineering
  - **Thesis:** Locating friends and family using GPS
  - **Percentage:** 73 %
- **Kakathiya University, Warangal, India** June 2002 - Apr 2006  
*Bachelor of Technology (BTech)* Warangal, India
  - **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

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- **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

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

## FUNDED PROJECTS

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- **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

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- **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

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1. **Dr. C Krishna Mohan (PhD Supervisor)**  
Professor, Department of Computer Science  
Indian Institute of Technology Hyderabad  
India  
**Email:** ckm@cse.iith.ac.in  
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1. **Dr. Sobhan Babu**  
Associate Professor, Department of Computer Science  
Indian Institute of Technology Hyderabad  
India  
**Email:** sobhan@cse.iith.ac.in  
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1. **Dr. Sumanth Yenduri**  
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