Kondapally Madhavi

+91 78936 55228 | cs21resch15001@iith.ac.in

in LinkedIn | G Google Scholar |

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]**

[J.3: 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* 2026

[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: 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

- **Kondapally Madhavi**, K Naveen Kumar, C Krishna Mohan, "**System and method for visual segmentation for autonomous vehicles under transitional weather conditions**", Indian Patent Office, Application no. **202541129186**, Dec, 19, 2025

TEACHING EXPERIENCE

- **B.V. Raju Institute of Technology, Narsapur (BVRIT Narsapur)** *Feb 2015 - Aug 2021*
  Assistant Professor Hyderabad, India
  ◦ **Department:** Information Technology

- **Marri Laxman Reddy Institute of Technology (MLRITM Hyderabad)** *Dec 2011- Oct 2012*
  Assistant Professor Hyderabad, India
  ◦ **Department:** Computer Science and Engineering

- **TRR Engineering College (TRREC, Hyderabad)** *Dec 2010 - Dec 2011*
  Assistant Professor Hyderabad, India
  ◦ **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)**
   Professor, Department of Computer Science
   Indian Institute of Technology Hyderabad
   India
   Email: ckm@cse.iith.ac.in
   Phone: (+91) 94917 12312

1. **Dr. Sobhan Babu**
   Associate Professor, Department of Computer Science
   Indian Institute of Technology Hyderabad
   India
   Email: sobhan@cse.iith.ac.in
   Phone: (+91) 96527 28127

1. **Dr. Sathya Peri**
   Professor, Department of Computer Science
   Indian Institute of Technology Hyderabad
   India
   Email: sathya_p@cse.iith.ac.in
   Phone: (+91) 703-239-7980