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 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]**

[C.1: 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.2 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: 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

[W.2: ICPRW] **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 Workshops*, ICPRW proceedings, India, **2024**

[S.1: TIP] **Kondapally Madhavi**, K. Naveen Kumar, C. Krishna Mohan, **CaRS: Leveraging Causal Intervention in Transitional Weather Autonomous Driving Conditions for Efficient Segmentation**. *CVPR 2025*

[S.2: Elsevier PR] **Kondapally Madhavi**, K. Naveen Kumar, Chalavadi Gayathri, **TSANet: Forecasting Traffic Congestion Patterns from Aerial Videos using Graphs and Transformers**. *Pattern Recognition (Elsevier)*

Patents

- **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, Sobhan Babu,"**System And Method For Performing Adaptive Object Detection In An Autonomous Vehicle System**", Indian Patent Office, Application no. **202541001505**, Jan, 07, 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:** Principal Investigator (PI), Project Lead

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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   Indian Institute of Technology Hyderabad
   India
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   Indian Institute of Technology Hyderabad
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