HARITHA PRASAD RAYAKOTA

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EDUCATION

University of Nebraska–Omaha
Ph.D. in Information Technology *Aug 2020 –*

University of Nebraska–Omaha
M.S. in Computer Science *Aug 2020*

Oklahoma State University
M.S. in Electrical Engineering *May 2012*

Jawaharlal Nehru Technological University, Hyderabad, India
B.Tech. in Electronics & Communication Engineering *May 2010*

RESEARCH INTERESTS

Machine Learning, Deep Learning, Computer Vision, Multimodal Fusion, Robotics, Biomedical Information Retrieval

PUBLICATIONS

[5] [IEEE ICMLA 2025, Submitted] **Rayakota, H. P.,** & Huang P.C: ViT-TinyLlama: A Lightweight Vision-Language Model for Explainable Autonomous Driving

[4] Shakya, E., **Rayakota, H. P.,** & Huang, P. C. (2024, December). Improving CLIP for Biomedical Retrieval: A Multi-Margin Contrastive Loss Approach. In *2024 IEEE International Conference on Big Data (BigData)* (pp. 1104-1113). IEEE.

[3] **Rayakota, H. P.,** & Huang, P. C. (2024, May). HybridTE 2: Hybrid Transformer-based End-to-End Learning for Autonomous Driving. In *2024 IEEE 7th International Conference on Industrial Cyber-Physical Systems (ICPS)* (pp. 1-7). IEEE.

[2] Master's Thesis: End-To-End Framework for F1/10 Auto-Car in a Simulated Environment

[1] Lim, B. Y., Roth, K., Nambiar, S., & **Rayakota, H. (2014).** Rapid Prototyping of Energy Management Applications with FRESH. *URL: https://energytaxincentives.org/files/proceedings/ 2014/data/papers/11-763. pdf.*

TEACHING

University of Nebraska–Omaha

- Introduction to CS I (Python), Teaching Assistant (Fall 24, Spring 25)
- Introduction to Web Development, Instructor of Record (Spring 24)

- Introduction to Web Development, Teaching Assistant (Fall 23)
- Introduction to CS II (Python), Teaching Assistant (Spring 22-Spring 23)
- Introduction to JAVA II, Teaching Assistant (Fall 19, Fall 20-Fall 21)

Oklahoma State University

- Automatic Control Systems, Teaching Assistant (Spring 11, Spring 12)

RESEARCH EXPERIENCE

University of Nebraska–Omaha

Ph.D. Research in Information Technology

- Designing a multimodal end-to-end framework for autonomous driving
- Developing and evaluating navigation control classification models using deep learning
- Integrating videos and text data for Visual Question Answering tasks, utilizing Large Language Models (LLMs)
- Designing multimodal fusion models for disease classification by integrating images and text input modalities to enhance diagnostic performance.

Fraunhofer CSE, Technical Intern *Sept 2012 – March 2013*

- Designed an Android application for energy-efficient home automation and thermostat control

SERVICE

- Reviewer, IEEE ICPS 2024,
- Judge, CREATE Foundation: Programming Palooza

PROFESSIONAL EXPERIENCE

Ecloud Labs, Software Developer *Apr 2013 – Sept 2014*

- Developed Android applications and web-based solutions using HTML, CSS, and JavaScript
- Troubleshot production issues and fixed application bugs

TECHNICAL PROFICIENCY

- Languages: MATLAB, Python, Java, ROS, R, SPSS
- Machine Learning / DL libraries: Scikit-learn, NumPy, Keras, PyTorch, TensorFlow, Pandas, OpenCV, NLTK
- Web Technologies: HTML, CSS, JavaScript