NASIKETHAN R

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Technical Skills

Languages and Databases: Python, Java, JavaScript, MySQL, MongoDB
Tools and Technologies: Scikit-learn, NumPy, TensorFlow, Pandas, OpenCV
Frontend Frameworks and Libraries: Angular JS, React JS(elementary), Streamlit, Bootstrap
IDEs: VS Code, IntelliJ, NetBeans

Projects

Emergency Vehicle Detection using Audio Signal and Image Processing Techniques   September 2023 – November 2023

- Developed a real-time emergency vehicle detection system using **YOLOv8 for spatial object detection** and **LSTM for temporal pattern recognition**, achieving a **96.6% accuracy rate**.
- Enabled dual-modality input processing by integrating **audio and video analysis**, improving emergency vehicle detection **precision by 9%**
- Applied **data augmentation** and **signal/image preprocessing techniques** to improve performance under **nighttime and low-visibility conditions**.
- Leveraged **eXplainable AI (XAI)** techniques for result transparency and Formulated the system for integration with **Advanced Driver Assistance Systems (ADAS)** in both **autonomous and manual vehicles**.

Dynamic Scene Perception and Navigation Assistance for Visually Impaired   January 2024 – April 2024

- Engineered a real-time visual inference system integrating **YOLOv8 for object detection** and **Gemini LLM for environmental narration**, achieving **over 95% accuracy** in scene understanding and object classification.
- Architected and implemented 4+ intelligent modules including **scene detection**, **color recognition**, **visual solver**, and a **danger detection module** to identify threats like oncoming vehicles or trains, improving **scene recognition accuracy to 95%**.
- Facilitated enhanced user safety through a **real-time alerting mechanism**, providing autonomous navigation support tailored for visually impaired individuals in complex environments.
- Delivered a comprehensive accessibility solution by combining **deep learning and** NLP to convert detected visual cues into **informative, context-aware summaries**, improving spatial awareness and autonomy.

Context-Aware Healthcare Assistance Powered by Language Models and ML Algorithms   December 2024 – April 2025

- Build and deployed a hybrid healthcare chatbot combining neural network-based intent classification, LLM-based responses, and multilingual support, **achieving 98% accuracy, 5.7% error rate and 1.1s response time**.
- **Reduced model loss from 0.35 to 0.18** by integrating intent, context-aware logic, and real-time language translation to support diverse health-related queries.
- Integrated **speech-to-text and text-to-speech** features to support an inclusive user experience with **multilingual input and output** across voice and text interfaces.

Certifications

Python for Data Science / *NPTEL*

Machine Learning with Python | *IBM*

Supervised Machine Learning: Regression and Classification | *Stanford Online*

Image processing using CNN | *VIT University*

Fundamentals of Java programming | *Board Infinity*

Docker for Java Developers | *Udemy*

Education

VIT University, Vellore   **August 2023 – April 2025**
Master of Computer Applications   *GPA:8.6/10*

Gobi Arts and Science College, Gobichettipalayam   **August 2020 – May 2023**
Bachelor of Computer Applications   *GPA:7.2/10*