Dharun Raagav R R

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Summary — I am a Computer Science Engineer with a strong focus on Deep Learning and edge computing for real-time applications. Passionate about leveraging AI to optimize system performance and solve complex challenges, I specialize in bridging cloud-edge systems and exploring diverse architectures to enhance real-time data processing. Seeking opportunities to contribute to innovative AI-driven projects in IoT and edge computing domains.

Skill

Machine Learning & Deep Learning, IoT & Edge Computing
Languages Python,PyTorch,TensorFlow,MySQL

OS Ubuntu,Windows
Testing Pytest, Docker

Research Papers and Publications

Enhancing Object Detection with Surveillance Rovers by Using YOLOv9 Model   *JSIR |UnderReview*
  – *Developed an object detection system for surveillance rovers using the YOLOv9 model.*
  – *Integrated H.265 live encoding, significantly reducing latency and making the system suitable for low-level edge devices.*

Enhancing Product Interaction Ratings through Emotion Detection Techniques
                                                              (ICICC) | Accepted, Waiting for Online Publication
  -*Compared emotion detection using keypoints (80%) and unsupervised learning (86%)accuracy*
  – *Investigated emotion detection techniques for product interaction ratings, improving consumer feedback*

Comprehensive Analysis of YOLO Models for Deployment in Precision Agriculture   *Results in Engineering/In Review*
  – *Conducted an in-depth analysis of YOLO models (v8-v11) for deployment in precision agriculture, offering detailed suggestions on when to use each model based on specific requirements.*
  – *Studied the importance of SiLU activation in YOLO models and compared its performance with ReLU. Achieved 82% accuracy with ReLU and 93% with SiLU.*

Projects

ECG Monitoring System with IoT Using MAX30003 Portably
  – *Designed an IoT-based ECG monitoring system using the **MAX30003 sensor**, enabling real-time heart rate monitoring.*
  – *Integrated a built-in algorithm for measuring the time between successive peaks of the **QRS complex**, enabling heart-rate computation without requiring microcontroller-side code.*
  – *Featured **electromagnetic interference filtering** to minimize noise and interference, improving signal accuracy.*

Women's Safety System Using MobileNet and WIDER FACE Dataset
  – *Developed a women's safety system for real-time threat detection, classifying men and women with **84% accuracy**.*
  – *Utilized **MobileNet** with the **WIDER FACE dataset** for face detection and classification in dynamic environments.*

Face Detection Model for College Using MTCNN and Transformers
  – *Built a face detection system for college using **MTCNN** for face detection and **transformers** for feature enhancement.*
  – *Collected a single image and performed various augmentations to prevent model overfitting, ensuring robust performance.*

YOLOv8, YOLOv9, YOLOv10, and YOLOv11 Deployment on Jetson Nano with Reduced Latency
  – *Deployed multiple YOLO models (v8-v11) on **Jetson Nano**, optimizing them for low-latency performance on edge devices.*
  – *Focused on real-time object detection capabilities and minimizing inference time for efficient edge deployment.*

Internship

National Institute of Technology (NIT) Internship   **27.May.2024 to 25.July.2024**
– *Worked on **real-time object detection from webcam video** using **YOLOv9** during the internship at NIT.*
– *Optimized YOLOv9 for low-latency performance, enabling real-time detection on edge devices.*

Education

SRM Institute of Science and Technology   **Tiruchirappalli, IN**
B.Tech in Computer Science and Engineering – Computer Science and Engineering; CGPA: 8.50   *Sep. 2022 – Present*
Kendriya Vidyalaya   **Perambalur, IN**
12th, CBSE; Score: 69%   *May 2022*
10th, CBSE; Score: 65%   *Jun. 2020*