Ayyapusetty Srivalli
Embedded & Ai Engineer

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Professional Summary

Innovative Software Engineer with 1.7 years of R&D experience, specializing in optimizing ML models for resource-constrained environments. Skilled in C, C++, Python, and systems-level programming including multithreading, IPC, and networking.

Technical Skills

Programming Languages	**:** C, C++, Python
Frameworks	**:** PyTorch,ONNXRuntime, TVM
Communication Protocols	**:** UART, SPI, I2C
Hardware Platforms	**:** TDA4VM, Jetson(nano, xavier-NX), ESP32
Data Processing & visualization	**:** Numpy, Pandas,Matplotlib,OpenCV, GStreamer
Core Competencies	**:** Data Structures, STL, Design Patterns, Computer Networks, Socket programming, Multithreading, IPC.

Work Experience

Working as an R&D engineer at ZENTREE LABS from September 2023 to Present.

Projects

1. People and Chair Occupancy Detection
- Designed post-processing to extract insights, including counts of people, chairs, and occupied chairs.
- Integrated the solution into a Qt application for visualization and user interaction.
- Enabled real-time input handling from single and multi-camera feeds with synchronized, efficient resource management.
- Utilized MySQL to store people, chairs, and occupancy count data, ensuring accurate tracking.

2. MNIST Classification Via Communication Protocol
- Applied data preprocessing techniques such as normalization, data augmentation, and splitting for training, validation, and testing.
- Optimized model performance through hyperparameter tuning, dropout regularization, and early stopping.
- Established connections and integrated various code snippets, ensuring smooth interaction between the model, hardware, and communication protocols.

3. **Smart Factory Vision System**

- **Model Training:** Developed an integrated vision system by training a MobileNet V3 model to classify images as fruit/non-fruit and employing YOLO for detecting spots to assess fruit quality.
- **Overfitting Mitigation:** Applied various techniques to improve model performance on a small dataset without overfitting.
- **Physical Integration:** Developed a physical setup with a servo motor to automatically remove bad fruits based on a live video feed.

Education

SANTHIRAM ENGINEERING COLLEGE (affiliated with JNTU Anantapur)

B Tech in Computer Science And Engineering | CGPA: 7.9   2019-2023