Murali Peddi

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Education

New York University **Expected Graduation – May 2026**
MS in Computer Engineering *NYC, New York*

- Coursework: Machine Learning, Embedded Systems, Computer System Architecture

Vellore Institute of Technology **Sep. 2020 – May 2024**
BS in Electronics and Communication Engineering *Vellore, India*

- Coursework: Micro-Controllers, Digital Logic Design, Analog Electronic Circuits, Signal and Image Processing

Experience

Graduate Assistant, New York University CAN Lab **Sep 2024 - Present**

- Coordinated on a research to implement Lane Changing Algorithms utilizing **Computer Vision** and Machine Learning techniques for an Autonomous Vehicle on NVIDIA Jetson Board, integrating Intel's RGBD Camera, GPS and IMU.
- Tested and programmed the whole system on a Linux based system, improving performance by 20%.

Embedded Engineer Intern, Stingfly Aerospace **Nov 2023 - Apr 2024**

- Conducted research related to the development of UAVs and streamlined **firmware programming** and circuit design.
- Calibrated Torque, Thrust, and RPM for an innovative thrust stand, resulting in a 15% increase in efficiency.

Electronics Head (Leadership), Team Kshatriya **Mar 2023 - Mar 2024**

- Represented VIT Vellore at the BAJA SAE INDIA competition, collaborating with a multi disciplinary team to design and manufacture an all-terrain vehicle and guided 35 juniors in manufacturing electrical ATVs.
- Broadened in circuit design, wiring, Grounded Low Voltage (GLV) systems, and **Data Acquisition** for EV.

Embedded Systems Engineer Intern, JOL Energy **Aug 2023 - Oct 2023**

- Designed a Schematic and PCB that facilitated seamless communication between the payment server and ESP32 using the HTTP protocol, enabling the charging process upon payment confirmation for an EV Charging Station.
- Improved security and power efficiency by 15x through the development of a payment system using LoRaWAN Protocol.

Hardware Engineer Intern **Jul 2023 - Aug 2023**

- Integrated a hearing aid solution into smart glasses by designing **schematics** and **PCB designs**.
- Designed schematic to combine Amplifier, Bluetooth module, Battery Management System, and Accelerometer.

Research

Real Time Audio Recognition for Hearing Impaired, IEEE | *Signal Processing, Tensorflow, CNN* **May 2024**

- Developed a real-time multi-model **deep learning** algorithm for parallel monitoring of environmental sounds and specific wake-word to activate speech recognition for every 10 seconds.

Accident Prevention for Autonomous Vehicle, IEEE | *C, ATmega328P* **May 2023**

- Implemented an accident prevention algorithm that employed sensor fusion techniques to detect obstacles, lanes, and 5 potential collision scenarios in real-time.

Projects

Crop Prediction using Machine Learning | *Python, Machine Learning, VSC*

- Improved a model utilizing **Random Forest**, achieving an accuracy of 99.24% in predicting optimal crops based on environmental factors like nitrogen, phosphorus, and rainfall.

6502, An 8-bit Computer | *Computer architecture, 6502 CPU, EEPROM, Assembly*

- Developed a fully functional 6502-based 8-bit computer system by integrating peripherals such as keyboard, LCD and OLED displays, through effective design on breadboard and PCB using Altium tools.

Technical Skills

Languages:	Python, C/C++, Embedded C, Assembly, Matlab
Frameworks:	Scikit, TensorFlow, OpenCV, Keras, Numpy, Pandas, Matplotlib
Tools:	Jupyter, VSC, Git, MATLAB, Eagle, Proteus, Keil, LTspice, Multisim, ModelSim, Thinkspeak
Microcontrollers:	STM32, NVIDIA Jetson AGX Xavier, Raspberry Pi, ESP8266, Arduino, 8051
Protocols:	USB, SPI, I2C, JTAG, UART
Hardware:	Embedded Systems, Circuit Design, PCB Design, Analog and Digital Circuits
Software:	Data Structures and Algorithms, Machine Learning, Computer Vision, Firmware