Madana Victor Vasanth
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M. Tech in Embedded and Machine Learning Systems
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Education

National Institute of Technology, Warangal

MTech in Embedded and Machine Learning Systems (*2024–2026)*
CGPA: 7.4

TKR College of Engineering and Technology, Hyderabad
BTech in Electronics and Communication Engineering (*2019–2023)*
CGPA: 7.39

Sri Chaitanya Junior College, Hyderabad (*2017–2019)*
Grade XII (MPC)
CGPA: 6.6

G. Narayanamma High School, Hyderabad (*2016–2017)*
Grade X
CGPA: 7.7

Experience

Research Intern
National Institute of Technology, Calicut *(June 1 – July 18, 2021)*
Project: Heart Disease Categorization using Machine Learning

- **Developed** a machine learning model for heart disease classification and analysis.
- Gained hands-on experience in **healthcare-based AI** applications.
- Enhanced expertise in data preprocessing, model training, and evaluation.
- Worked under the guidance of **Dr. Waqar Ahmad, Dept. of ECE, NITC.**

Academic Projects

FPGA-Accelerated Crop Disease Detection Using Real-Time Image Processing on Zynq

- Developed an FPGA-based system for real-time crop disease identification.
- Ensured quick and precise detection to support modern agriculture.

Embedded AI for Dyslexia Detection: ML & Handwriting Analysis on Raspberry Pi

- Utilized Raspberry Pi with a camera module for real-time handwriting image acquisition.
- Applied deep learning and image processing for dyslexia detection and analysis.
- Designed an assistive tool for early diagnosis and intervention.

Embedded UART Communication: Real-Time Distance Sensing with Tiva C and STM32 Microcontroller

- Interfaced Tiva C Series TM4C123GH6PM and STM32 microcontrollers with an ultrasonic distance sensor.
- Implemented real-time data transmission over UART for distance measurement.
- Designed a robust embedded communication system for sensor integration.

Power Management of Renewable Energy Using Micro Grid Via IoT

- Integrated IoT technologies for remote data management and control.

Combined multiple power producers and renewable energy sources to efficiently distribute electricity across locations, leveraging natural resources

Technical Skills and Expertise

Programming Languages: C, Python

Developer Tools & IDEs: STM32Cube IDE, Keil IDE, Arduino IDE, Vivado , MATLAB and CUDA

Embedded Development: JTAG Debugging, GDB, FreeRTOS

Wireless & Communication Protocols: UART, I2C, SPI, Bluetooth, Wi-Fi

Operating Systems: Windows, Linux

Cloud & Databases: Blynk (IoT & Remote Monitoring)

Embedded & Hardware Platforms: Arduino, STM32, Raspberry Pi, 8051 Microcontroller, Jetson Nano

Specialized Coursework: Embedded RTOS (ERTOS), FPGA-Based Systems, Embedded Hardware Programming

Soft Skills: Teamwork & Collaboration | Communication | Creativity | Problem Solving

Areas of Interest: Embedded Systems, RTOS, Machine Learning, IoT, VLSI

Achievements

Published Research Paper on IoT-Based Smart Energy Management

- Authored a paper titled "**Power Management of Renewable Energy Using Micro Grid via IoT**", focusing on real-time energy optimization.
- Published in **UGC CARE JICR Journal of Interdisciplinary Cycle Research** *(March 2023)*.
- Demonstrated how IoT-enabled microgrids enhance energy efficiency, remote monitoring, and intelligent power distribution.

Certifications

NPTEL & IIT Certifications:

- "**CMOS Digital VLSI Design**" – **IIT Roorkee** *(NPTEL Certified)*
- "Introduction to **Internet of Things**" – **IIT Kharagpur** *(NPTEL Certified)*

Specialized Workshops:

- "**Python for Scientific Computing**" – **NIT Warangal**
- **"Embedded C and ARM Cortex Microcontrollers" –** Jointly organized by **NIELIT Calicut, ARM & NPTEL**