

Sri Harsha Andukuri

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Summary

As a student of Electronics and Communication Engineering, I am deeply passionate about the integration of hardware and software systems. My journey began with hands-on projects using Arduino and C programming, which sparked my strong interest in embedded systems. Over time, I have gained substantial experience not only in embedded development but also in the domains of Machine Learning and Deep Learning. Currently, I am diving deeper into real-time systems, working extensively with RTOS to build efficient, time-critical embedded applications.

Education

RGUKT B.TECH IN ELECTRONICS AND COMMUNICATION ENGINEERING CGPA: 8.57	<i>Nuzvid</i> 2022 – 2026
RGUKT MACHINE LEARNING MINOR DEGREE	<i>Nuzvid</i> 2024 – 2026
RGUKT PRE UNIVERSITY COURSE CGPA: 9.83	<i>Nuzvid</i> 2020 – 2022
Sri Chaitanya SSC CGPA: 10	<i>Visakhapatnam</i> 2019 – 2020

Skills

- **Programming Languages:** C, Python
- **Hardware Platforms:** Arduino, Raspberry Pi, STM 32 Cube ide
- **Software Tools:** Xilinx Tools, MATLAB, LTSPICE, KICAD, RTOS

Experience

RESEARCH INTERN – NIT WARANGAL

May 2025 – Present

- Working on a deep learning-based project titled “**Crop Recommendation System Using Deep Learning**”, under the guidance of Dr. Vasundhara, NIT Warangal.
- Designed a multi-model pipeline for predicting weather, crop yield, and Minimum Support Price (MSP) using TCN, BiGRU, N-BEATS, and BiLSTM models.
- Proposed a revenue-based crop recommendation strategy that achieved over 96% accuracy for top crop prediction across districts.
- Used over 30 years of historical data and applied feature engineering, time-series preparation, and hybrid neural architectures.

INTERN – TUNICHAL AUTOMATIONS PVT. LTD.

Dec 2024 – Jan 2025

- Completed a 2-month internship focusing on fundamentals of Circuit and PCB Design.
- Gained hands-on experience in designing basic circuit layouts and translating them into PCB schematics.

Projects

AUTOMATED PLANT WATERING SYSTEM USING ML

NodeMCU, Python for analysis and model training

- Created a real-time machine learning algorithm for processing data with weather forecasts and soil moisture levels to optimize plantation irrigation strategy.
- Integrated soil moisture sensors and weather data to predict watering needs.
- Applied ML algorithms with both historical and current data to adjust watering schedules.
- Implemented automated watering via a pump controlled by a microcontroller.

COAL MINE SAFETY MONITORING SYSTEM

ESP8266, Firebase, Netlify

- Developed a NodeMCU-based coal mine safety monitoring system for workers.
- Created an automated alert system monitoring temperature, humidity, and gas levels via Firebase; now used by over 4 team members, enhancing operational efficiency.
- Displayed real-time data on a web interface for monitoring.
- Implemented an alarm system to alert unsafe conditions via a buzzer.

SPEED CONTROL OF DC MOTOR USING FUZZY LOGIC

NodeMCU, Firebase, Optical Encoder, Arduino IDE

- Designed and implemented a fuzzy logic controller (FLC) on ESP8266 NodeMCU for adaptive DC motor speed control.
- Collected user inputs via a Firebase-connected web interface for target distance and time; computed speed requirements accordingly.
- Used triangular membership functions and a rule base for PWM output control.
- Integrated a rotary encoder for real-time feedback to fine-tune system accuracy.
- Logged pulse count, speed, and motor response on Firebase for remote monitoring and analysis.

CROP RECOMMENDATION SYSTEM USING DEEP LEARNING

Python, Keras, TensorFlow, Time-Series Forecasting

- Developed an integrated deep learning framework during a 9-week internship at NIT Warangal to recommend the most profitable crop for a district and year.
- Built weather forecasting models (TCN + BiGRU) with RMSE as low as 0.0571 and used them to feed downstream tasks.
- Predicted crop yield using N-BEATS (MAE = 879.32 kg/ha) and MSP using BiLSTM/N-BEATS with MAPE as low as 0.45%.
- Designed a recommendation pipeline using revenue estimation from predicted yield and MSP, achieving 96.14% accuracy.

Certificates

- **Essential Mathematics for Machine Learning:** NPTEL
A course of study offered by Indian Institute Of Technology Roorkee.
- **KiCAD PCB Design For Embedded Systems & Electronics Projects:** UDEMY
A course of study offered by DeepBlueMbedded Academy.
- **AI for Everyone:** EDX
A course of study offered by IBM.
- **Embedded for beginners:** NIELIT CALICUT
A course of study offered by NIELIT Calicut.
- **Career Development: Resume, Networking and Interview Skills:** EDX
A course of study offered by FullbridgeX.
- **Machine Learning for Engineering and Science Applications:** NPTEL
A course of study offered by Indian Institute Of Technology Madras.
- **VLSI Physical Design with Timing Analysis:** NPTEL
A course of study offered by Indian Institute Of Technology Roorkee.