

Geetha Rani Nettalam

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SUMMARY

Embedded Systems Developer with experience in designing and developing application-level firmware for real-time embedded systems. Experience in system integration testing, debugging complex hardware-software issues, and collaborating with cross-functional teams to ensure project alignment. Strong analytical thinking and team collaboration skills enhance the ability to deliver reliable solutions under dynamic conditions. Career goal: to leverage technical expertise in embedded systems to drive innovation in cutting-edge technology projects.

EXPERIENCE

Embedded Systems Developer, 04/2023 - Current

Green Tiger Mobility Pvt Ltd - Bangalore, India

- Designed and developed IoT-based systems for real-time vehicle health monitoring and location tracking, integrating sensors and cloud communication protocols.
- Designed and developed application-level firmware for embedded systems used in real-time applications.
- Conducted system integration testing and validated functionality through on-vehicle testing to ensure real-world reliability and performance.
- Created documentation for test procedures, bug reports, and implementation details to support maintenance and knowledge transfer.

Embedded Engineer, 09/2020 - 03/2023

Young Minds Technology Solutions - Tirupati, India

- Worked with various innovative prototype applications related to biomedical such as monitoring the health parameters of a patient on regular basis and sending via Cloud communication protocols, Embedded AI such as Raspberry Pi based Machine Learning algorithm implementations for gathered sensor data and generate a predictive analysis, Automotive such as Live tracking of vehicle and alert generation on theft detection.
- Analyzing data sheets
- Analyzing complex technical problems, diagnosing their root cause and finding solutions
- Testing and Debugging
- Mentoring and tutoring interns and students.
- Collaborating with customers to create system based on their needs.
- Determined strengths and weaknesses of established processes and practices.
- Monitored system performance to identify weaknesses, bottlenecks and inefficiencies.

Avionics Intern, 06/2021 - 07/2021

Star Orbitals - Gujarat, India

- Designing an avionics system that can fit in the rocket design
- PCB designing using Eagle
- Simulation of schematic circuit
- Developed team communications and information for meetings.

SKILLS

- Programming Languages - Embedded C/C++, Python, MATLAB
- Tools - MATLAB(Image Processing Toolbox, Computer Vision Toolbox, Deep Learning Toolbox); Python(Pandas, NumPy, Scikit-Learn, OpenCV)
- IDE - Visual Studio Code, Anaconda, Jupyter Notebook, Python IDLE, STM32CubeIDE, Mounriver Studio
- Microcontrollers - 8-bit and 32 bit microcontrollers
- Protocols - UART, I2C, CAN, HTTPS, MQTT, TCP/IP, SSL, BLE
- Modules - EC200U(QuecOpen SDK), L511C (OpenCPU SDK), L89, M66, SIM800L, SIM900A
- Soft Skills - Analytical Thinking, Adaptability, Time Management, Team Collaboration

EDUCATION

B.Tech : ECE, 2020

Sree Rama Engineering College -

Tirupati, AP

- 8.65 CGPA

Intermediate : MPC, 2016

Gitam Jr College - Tirupati, AP

- 96.9%

SSC, 2014

Sri Vijetha Public School - Tirupati, AP

- 9.2 CGPA

CERTIFICATIONS

- Principles of Communication Systems-I from NPTEL
- Principles of Signals and Systems from NPTEL
- Industrial Automation - PLC, SCADA, HMI Networking
- Avionics Intern - Space Technology and Aeronautical Rocketry

Internship in Industrial Automation, 10/2019 - 11/2019

Siemens Centre of Excellence - Tirupati, AP, India

- Siemens S7-1200 PLC programming using TIA Portal
- SCADA
- WINCC HMI

PROJECTS

- **Raspberry Pi based Assistive Robot with emotion classifier using NLP+ML**

Developed a voice-interactive assistant robot using Raspberry Pi that processes user speech, classifies emotions using NLP and machine learning (TF-IDF + KNN), and generates appropriate speech responses. The system integrates audio input, sentiment analysis, GPIO-based actions, and intelligent dialogue generation for real-time interaction.

- **PCB Design for Electronic Device to Monitor Pressure parameters on Rocket Design using Eagle PCB**

With the help of Eagle PCB, the PCB is designed that can able to monitor the pressure, temperature and altitude on the rocket system and storing the data on SD card. Simulation is done in Proteus for this project.

- **Human Age and Gender Classification using CNN MATLAB**

With the help of CNN algorithm, the classification is done for an image which gives results in both gender and age group. Where as the network consists of layers input image layer, convolution layer, Batch Normalization layer, ReLu Layer, Average Pooling Layer and fully connected layer.

- **Kidney Stone Detection and Localization using Fuzzy -C Means Segmentation**

With the help of fuzzy c means segmentation, the location of kidney stone identification is done. Where as Morphological operations like erosion, dilation also used in it for accurate results.