# NARENDHIRAN S

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## Objective

An Electrical and Electronics Engineering Graduate with expertise in Embedded Systems and Hardware-Software Integration. Proficient in working with C, bus protocols, Unix, and other relevant technologies, I am driven to excel in team-oriented environments, contributing to shared objectives while consistently advancing my expertise and capabilities. I have the proven ability to troubleshoot and optimize embedded solutions, ensuring seamless integration and reliability. With a passion for innovation, I actively seek challenges that require critical thinking and a commitment to delivering cutting-edge solutions in real-world applications.

## Education

- **SRM Institute of Science and Technology** — Chengalpattu, Tamil Nadu
  *Bachelor of Technology in Electrical and Electronics;* ***CGPA****: 8.39* — *2020 - 2024*
- **Nehru Higher Secondary School** — Perambalur, Tamil Nadu
  *12th State Board of Tamil Nadu;* ***Percentage****: 66.8* — *2020*
- **Nehru Higher Secondary School** — Perambalur, Tamil Nadu
  *10th State Board of Tamil Nadu;* ***Percentage****: 85.6* — *2018*

## Skills Summary

- **Skills**: C, Embedded C, C++, 8051, TCP/IP, Unix, ARM7, UART, I2C, SPI, CAN
- **Tools**: Ubuntu, Keil, MATLAB, Flash Magic, KiCAD
- **Soft Skills**: Leadership, Adaptability, Probelm Solving, Teamwork, Time Management

## Experience

- **PD Technology Service** — Chennai, India
  *Testing and Commissioning Engineer* — *April 2024 - May 2024*
  - **Work Description**: Assisted in the testing and analysis of insulation defects, utilizing advanced quality assurance methodologies to assess and validate the integrity of electrical assets. Collaborated with the team to implement testing procedures, identify potential issues, and ensure compliance with industry standards for safety and performance. Played a key role in maintaining the reliability of electrical systems by contributing to detailed defect evaluations and reporting.
- **Vector Institute** — Chennai, India
  *Embedded Trainee* — *June 2024 - Present*
  - **Work Description**: In depth training in embedded systems that focus on C, Embedded C, and ARM7 processor. Practical exposure in the communication protocols like I2C, SPI, CAN, debugging, and integration of hardware and software. TCP/IP networking and simple programming for Linux to be equipped in addressing actual issues of the real-world system in its development.

## Projects

- **IoT-based Spatial Monitoring and Environmental Prediction System Using Deep Learning for Agricultural Greenhouses**: Link
  **Problem**: Traditional methods of monitoring and maintaining optimal environmental conditions in agricultural greenhouses lack precision and require manual intervention, leading to inefficiencies and reduced crop yield.
  **Solution**: Developed a system integrating IoT sensors for real-time spatial monitoring of temperature, humidity, and soil moisture. Implemented deep learning algorithms to predict environmental conditions and automate greenhouse adjustments for optimal crop growth.
  **Key Skills**: IoT, MATLAB, Deep Learning, Data Analysis, Sensor Integration.
- **Student Database Record Using Single Linked List**: Link
  **Problem**: Managing student data in educational institutions using manual or static systems often leads to inefficiency and difficulty in data retrieval.
  **Solution**: Designed and implemented a student database system using a single linked list in C programming. Enabled efficient addition, deletion, and search functionalities for managing student records dynamically.
  **Key Skills**: C Programming, Data Structures (Linked List), Algorithm Development.
- **Autonomous Car using Arduino**: Link
  **Problem**: Driving manually in constrained environments like warehouses or agricultural fields can lead to inefficiencies, increased operational costs, and accidents. There is a need for an affordable, automated navigation system that ensures precision and safety.
  **Solution**: Designed and developed an autonomous car prototype using Arduino, equipped with ultrasonic sensors to detect and avoid obstacles in real-time. The system included motor drivers for controlling movement and an efficient algorithm for path planning, enabling automated navigation and obstacle management in dynamic environments.
  **Key Skills**: Arduino, Embedded, Sensor Integration Algorithm design.

- **Body Control Module in Automotives Using CAN Protocol**: **Link**
  **Problem**: Traditional automotive body control systems face challenges in integrating various subsystems efficiently, leading to increased wiring complexity and communication delays.
  **Solution**: Designed a body control module using the CAN protocol to integrate and manage automotive subsystems like lighting, wipers, and door locks. Ensured efficient communication and reduced wiring complexity through CAN-based messaging.
  **Key Skills**: Embedded Systems, CAN Protocol, Automotive Electronics, Microcontrollers, C Programming.

## Certifications

- **MATLAB On-Ramp (MATLAB Academy)** **Link**: MATLAB language, Assembly
- **Power System Protection (SRMIST)** **Link**: System reliability
- **Python Bootcamp (Udemy)** **Link** : Python

## Clubs and Activities

- **Directorate of Student Affairs (DSA) - Operations Team Member** SRMIST, Chennai
  *Supported the smooth execution of student events and activities.* *June 2022 - March 2023*

- **EEE Association - National Service Scheme Member** SRMIST, Chennai
  *Participated in community service and social responsibility initiatives.* *July 2022 - May 2024*

## Languages

**Tamil, English**