Renish R

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Education & Certifications

Indian Institute Of Information Technology, Vadodara	2022-Present
*B.Tech Information Technology (**CGPA: 6.96**/10)*	*Gandhinagar, GJ*
Industry 4.0 and Industrial Internet of Things (NPTEL)	Dec 2025
*Elite+Gold Certification – **Score: 93%, Topper 2%***	*Online*

Experience

SAP sponsored Edunet Training Programme	Oct 2024 - Mar 2025

ML, DL & IOT Training from CodeUnnati Edunet Workshop
- Participated in applied workshops on IoT device integration, ML in real-life scenarios, and SAP system basics.
- Collected and managed sensor data, feeding it into ML models for analysis and predictive insights.

Embedded Systems Training Intern, EasyShiksha	May 2025 - July 2025

8051-based embedded C development and real-time applications
- Trained in 8051 microcontroller architecture, including memory management, I/O interfacing, timers, interrupts, and serial communication protocols.
- Developed real-time embedded applications using C, implementing switch debouncing, hardware timeouts, multi-state systems, and RS-232 serial interfaces for intruder alarm and data acquisition systems.

Projects

Perishable Goods Management using Raspberry Pi & ESP32 | *ESP32, Raspberry Pi, JS*
- Designed IoT architecture using ESP32s with multi-zone sensor arrays to monitor temperature, humidity, and other environmental factors across refrigerated transport containers.
- Implemented edge computing solution on Raspberry Pi running ML model for real-time freshness prediction, enabling offline functionality and local decision-making for drivers without network connectivity.
- Maintains system reliability in low-connectivity environments.

Smart Home using ESP32 and sensors | *C++, HTML*
- Developed a simple smart home system using ESP32 along with a web UI dashboard
- Established communication between multiple ESP32 microcontrollers at different locations using Wi-Fi

Outfit Recommender using siamese CNN | *Pytorch, CNN*
- Built an image-based outfit recommender using customized Siamese networks and CNN for visual similarity
- Trained on outfit pairs to learn pattern and style similarities using twin-input architecture
- Incorporated color histograms to enhance matching by analyzing complementary color patterns across items

Synced Pomodoro Timer | *C++, React, Node.js*
- Developed a Pomodoro timer app accessible via web and ESP32-based physical interface
- Synced timer state and controls in real-time across both platforms using MQTT.
- Enabled bi-directional control—timer can be started/stopped from either interface with consistent state sync

Movie Recommender System using Collaborative Filtering & GAN | *JS, Python*
- Implemented a modified structure of traditional GAN with Collaborative Filtering to boost personalized content
- Achieved a significant improvement in recommendation accuracy compared to baseline GAN models on benchmark datasets

Wireless Mouse using ESP32 & MPU6500 | *C++*
- Developed a Bluetooth based wireless mouse using MPU6500 gyroscope mounted on the hand and ESP32, enabling motion-based cursor control & button clicks through real-time sensor data.

Technical Skills

Programming Languages: C, C++, MicroPython, JavaScript, Lua, Bash
Architectures: AVR, 8051, ARM, ESP32
Concepts: Embedded Systems, Operating Systems, RTOS, Machine Learning, Cyber Security, Computer Networks
Tools and Platforms: avr-libc, ESP-IDF, STM32Cube, VSCode, Linux Systems.