ARYAN CHOUHAN

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EDUCATION

Pursuing B-Tech in Electronic and Telecommunication *Sept. 2024 – Aug. 2028*

Madhav Institute Of Technology & Science (Deemed University), Gwalior

SKILLS

- **Embedded Systems & IoT Hardware:** Arduino , ESP32, Raspberry Pi, Relay Modules, Gas Sensors (MQ Series), Digital and Analog Sensors,human detection sensors

- **Microcontrollers & Development Platforms:** Arduino IDE, ESP-IDF (ESP32), Raspberry Pi OS, GPIO interfacing, PWM, Uart, I2C

- **IoT Communication & Protocols:** Wi-Fi, MQTT, HTTP/HTTPS, REST APIs, Serial Communication

- **IoT Cloud & Data Visualization:** ThingSpeak, Sensor data logging

- **Programming Languages:** C++, Python, Embedded C/C++

- **Web Technologies (Frontend):** HTML, CSS, JavaScript

- **Software Tools & Simulation:** Wokwi, Tinkercad

- **Databases & Backend Basics:** MySQL, Database design, Sensor data storage

- **Data Analysis & Machine Learning:** Python (os, time, json, argparse, numpy, pandas, joblib, matplotlib, seaborn, torch, sklearn),

PROFESSIONAL EXPERIENCE

IEEE IAS Student Chapter, MITS-DU Gwalior — Event Secretary *July 2025 – present*

- Coordinated IEEE IAS events and workshops

- managed planning, documentation, and team coordination.

Google Student Campus Ambassador *July 2025 – Dec. 2025*

- Promoted Google programs and initiatives

- organized student outreach and engagement activities.

Projects

Smart Fire Detection and Alert System
Developed an embedded fire prevention system for indoor environments using gas and smoke threshold detection to trigger audible alarms and transmit emergency alerts for rapid response.
Tech stack :-Arduino UNO, MQ-2 Gas Sensor, HC-05 Bluetooth Module, GSM Module, Buzzer, Embedded C++

Task Management Web Application *GitHub Link*
Built a responsive web-based task management application supporting task creation, scheduling, alarm notifications, and graphical productivity insights for effective task tracking.
Tech Stack:-HTML, CSS, JavaScript.

Bi-Mode Water Thermoregulator
Engineered a dual-mode water temperature regulation prototype capable of both heating and cooling, designed as a compact and energy-efficient solution for students and travelers.
Tech Stack:-Proteus Simulation, Temperature Sensor, Relay Module, Power Control Circuit.

Smart Automated Plant Watering System
Developed an ESP32-based automated irrigation system that monitors soil moisture in real time and autonomously controls water flow using relay-based cutoff for urban household gardens.
Tech Stack:-ESP32, Soil Moisture Sensor, Relay Module, Water Pump, Embedded C++.

RESEARCH INTERESTS

- Machine Learning & Deep Learning, Edge Computing

- Cyber Security

- Microcontroller-based Systems (ESP32, Arduino, Raspberry Pi, Jetson Nano)

- AI & ML in IoT

REFERENCES