

# COVER PAGE



**SWETHA PATRO**

**TITLE :** “Portfolio on IoT, Wireless,  
Design & PR”



**NAME -** Swetha Patro

**COURSE -** Diploma in Electronics & Engineering

**COLLEGE -** Government Polytechnic , Pendurthi

I am a dedicated and enthusiastic student pursuing a Diploma in Electronics and Communication Engineering at Government Polytechnic, Pendurthi. I have a strong interest in emerging technologies such as the Internet of Things (IoT), wireless communication, and website development. I also enjoy working on design-related tasks and actively participating in public relations and event coordination. I am eager to apply my knowledge in real-world projects and continue learning new skills to grow both technically and professionally.

# **SKILLS**

**TECHNICAL SKILLS** - IoT & Wireless connection , circuit design

**SOFT SKILLS** - Public speaking , Teamwork

# TOPICS & EXPERIENCE

## IoT -

I have a strong interest in IoT (Internet of Things) and have explored how sensors, microcontrollers, and wireless communication can be used to build smart systems. Below are some IoT-based project ideas and examples:

### 1. Smart Dustbin Using Ultrasonic Sensor

- Description: Automatically opens the lid when someone approaches.
- Components: Ultrasonic sensor, Arduino/NodeMCU, Servo motor.
- Purpose: Helps maintain hygiene and promotes touchless use.

## 2. IoT-Based Home Automation

- Description: Control lights and fans using a mobile app or voice commands.
- Components: NodeMCU (ESP8266), Relay module, Blynk app.
- Purpose: Enables smart control of home appliances.  
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## 3. Smart Streetlight System

- Description: Streetlights turn on automatically at night and off during the day.
- Components: LDR sensor, NodeMCU, Wi-Fi.
- Purpose: Saves electricity and automates lighting.

# wireless connection

Wireless communication is the transfer of information without using physical connections like wires or cables. It is widely used in IoT, mobile phones, remote controls, and networking systems.

## Technologies I Have Learned:

- Wi-Fi (IEEE 802.11): Used for wireless internet and IoT devices like NodeMCU.
- Bluetooth: Used in short-range communication, e.g., smart wearables, wireless audio.
- RF (Radio Frequency): Used in remote controls and wireless sensors.
- Zigbee: Low-power wireless communication for smart home devices.
- IR (Infrared): Used in TV remotes and simple data transfer.

## Applications in Projects:

- Connected IoT devices to cloud via Wi-Fi (e.g., Blynk App).
- Used Bluetooth modules like HC-05 for wireless control of Arduino-based systems.

# Public Relations

Public Relations involves effective communication, teamwork, and building good relationships with others. I have participated in various college activities that helped me improve my PR skills

## **. My PR Experience:**

- Assisted in organizing college events and technical fests.
- Helped in promoting events, inviting participants, and coordinating with faculty.
- Interacted confidently with students and staff, developing strong communication skills.

## **Skills Gained:**

- Communication and speaking skills
- Event planning and coordination
- Teamwork and leadership
- Problem-solving in real-time situations



# Language - c language

## Projects -

### 1. Room Temperature and Humidity Monitoring System

- **Description:** This project monitors the room's temperature and humidity in real-time.
- **Components Used:**
  - DHT11 or DHT22 sensor
  - NodeMCU (ESP8266)
  - Blynk App or Arduino IoT Cloud
- **Working:**
- The DHT sensor measures the temperature and humidity. The NodeMCU reads the data and sends it to a smartphone using Wi-Fi. Users can view live updates from anywhere.
- **Purpose:**
- Useful for smart homes, labs, and storage rooms where climate conditions must be monitored.

## 2. IoT-Based Smart Home Automation

- **Description:** Control home appliances like fans or lights using a mobile phone or voice assistant.
- **Components Used:**
  - NodeMCU
  - Relay Module
  - Blynk App / Google Assistant
- **Working:**
- Devices are connected to relays controlled by NodeMCU. Users can switch ON/OFF appliances wirelessly using their phone.

### 3. IoT Fire and Gas Detection System

- **Description:** Detects smoke or gas leaks and sends alerts to your phone.

- **Components Used:**

- MQ-2 gas sensor
- NodeMCU
- Buzzer
- IoT dashboard like Blynk

- **Purpose:** Prevents accidents by giving early warnings.

### 4. Smart Plant Monitoring System

- **Description:** Monitors soil moisture, temperature, and gives watering alerts.

- **Components Used:**

- Soil moisture sensor
- DHT11
- NodeMCU

- **Purpose:** Ensures plants stay healthy, good for home gardens and agriculture.

## 5. Smart Irrigation System

- **Description:** Automatically waters plants based on soil moisture levels and weather conditions.
- **Components Used:**
  - Soil Moisture Sensor
  - Rain Sensor
  - DHT11 (humidity/temp)
  - NodeMCU
  - IoT Cloud (ThingSpeak, Blynk)
- **Features:**
  - Saves water
  - Mobile alerts
  - Timer-based or auto-sensing watering

# ACHIEVEMENTS

- Participated in POLYTECHFEST in Government Polytechnic Kancharapalam.
- Complemented online courses like Soft skills , generative AI , innovation .

# CERTIFICATES

- EDX Certificate for Generative AI, Cybersecurity.,
- Soft skills certificate
- IoT Certificate ( Event by Government )

# CONTACTS

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