DELHI TECHNOLOGICAL UNIVERSITY

Department of Software Engineering

Labs & Infrastructure

Internet of Things Research Lab

Officer-in-Charge- Dr. Sanjay Patidar

Internet of Things has become a transformative technology, enabling interconnected devices to communicate, collect, and process data in real time, facilitating automation and intelligent decision-making across various industries. Using structured, methodical, and measurable techniques for the efficient and cost-effective creation and advancement of high-quality solutions in the Internet of Things (IoT) ecosystem. The IoT ecosystem extends beyond simple device connectivity, integrating advanced computing, analytic and security measures for enhanced efficiency.

The IoT Lab focuses on smart agriculture, smart transportation and environmental monitoring using AI-driven IoT solutions under embedded systems, wireless sensor networks, cloud computing domain. It also explores protocols and technologies such as MQTT, CoAP, LoRaWAN, BLE, 5G, and IoT security frameworks, as well as programming languages and tools including Python, C, C++, Java, R, MATLAB, ARM-based programming, and microcontroller development with ESP32, Raspberry Pi, and Arduino.

Equipment in IoT Lab (Computers and Hardware Peripherals)

Manufacturer/ Model	Specification	Unit
Dell OptiPlex 3080	Intel (R) Core (TM) i5-4570 CPU@3.20GHz/ 4.00 GB RAM/1.00 TB HDD 64-bit Windows 10	10
REES52 Raspberry Pi Night Vision Camera	5MP, Infrared (IR) LEDs,1080p video recording	05
Camera Module 5MP OV5647 Camera Module	Resolution-5MP, Dimensions- 2.5x2.4x1.7 cm	03
Raspberry Pi 5	8 GB RAM, 64-bit, quad-core cortex A76 processor	03
Touch Display for Raspberry Pi	7-inch, 1024x600 resolution, Capacitive Touch, HDMI	01
Arduino UNO	Microcontroller- ATmega328, Clock Speed- 16 MHz	01
Arduino Nano	Arduino Nano V3.0 Development Board	02
Bread Board And Power Supply Module	Breadboard(MB-102), Power Supply Module	02
Sensors	IR, Gas sensor, Humidity And Temperature Sensor, CO Sensor Module,	08
Wi-Fi Transceiver Module	Frequency Band-5 GHz, Data Rate-Up to 150 Mbps	03
Microcontroller Module	ESP32- WROOM-32 Development Board, Dual Core Processor, and 512KB RAM	01

Ongoing Project:

Autonomous Weed Detection and Removal System, Funded by IIT Kharagpur, I-Hub Foundation, AI4ICPS

Project Staff: Mr. Prince Singh
Designation: Research Engineer