



MANPREET WALIA

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Education

Graphic Era (Deemed to be) University

B.Tech in Computer Science & Engineering

2022 – 2026

CPI: 8.50

DPSG, C.B.S.E

Intermediate / +2

2020 – 2021

Percentage: 79%

DPSG, C.B.S.E

Matriculation

2019 – 2020

Percentage: 92%

Work Experience

IOT Software Intern

Aug'25 – Oct'25

Grid Sphere

- Developed software modules enabling reliable IoT communication in low-connectivity regions through the Zigbee protocol.
- Built a forest fire detection and alerting system by designing sensor data pipelines and optimizing transmission algorithms for efficiency and scalability.

Projects

AgroTech Rover for Smart Farming — Oct'25 – Present

- Developed an autonomous **ROS-based rover** with modular software architecture integrating real-time sensor data streams.
- Implemented **OpenCV** and **TensorFlow Lite** for on-device pest and disease detection with cloud logging via **Supabase**.
- Automated irrigation, pest control, and **GPS-based live telemetry**.

IoT-Based Integrated System — Jan'25 – March'25

- Engineered an **IoT-based system** integrating smart parking, automated irrigation, and environmental safety monitoring using **ESP32**.
- Developed a **mobile app interface** for real-time monitoring, control, and alert notifications.
- Implemented real-time data pipelines to optimize resource usage and support autonomous decision-making.
- **Tech:** Python, ESP32, IoT Sensors, Mobile App, Wi-Fi, Automation

Smart File Compressor — Nov'24 – Jan'25

- Developed a **Python Tkinter GUI** application for efficient file compression and decompression using **GZIP** and **ZLIB**.
- Integrated automatic **disk usage monitoring** and persistent metadata handling for secure, optimized file management.
- **Tech:** Python, Tkinter, GZIP, ZLIB, File Systems.

Technical Skills

Programming & Scripting Languages: C, C++, SQL, Java, HTML, CSS,

Relevant Coursework: Data Structures & Algorithms, DBMS, Operating System, Big Data Visualization, Internet Of Things

Embedded Systems & IoT Platforms: Arduino, ESP32, Raspberry Pi, Sensor Integration, GPIO Programming, ESP IDF

Achievements

- 1st Position in **Lakshagriha 4.0** Hackathon at Dev Bhoomi Uttarakhand University, competing against 100+ teams including international participants.
- 1st Prize Best Project Award in Project Display at **Tech Urja 2K25**, Khalsa College of Engineering, Amritsar.
- 2nd Runner Up in Nationwide IT Hackathon at **UNO Minda Hackathon 2025** for innovative smart resource management system.
- Best Research Paper Award at **RACCAI 2K24 International Conference** for "Prediction of Dengue using Machine Learning".
- Participated in **Hack 'N Dore 48-Hour Hackathon** and shortlisted in the top 80 teams out of 760 teams