

MANSI BISHT

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CAREER SUMMARY

IoT and Embedded Application Developer with 4+ months of hands-on experience in developing Python-based GUI applications for embedded and IoT systems. Strong expertise in PyQt-based HMI/desktop interfaces, device communication with ESP32 and Teensy, GPIO-based control, MQTT, and API integration. Experienced in building software applications for vending machines, RFID kiosks, data loggers, and automation devices, working at the application layer to integrate hardware and software systems.

EXPERTISE

Embedded Application Development (Application Layer) | Python-based GUI & HMI Development (PyQt) | Hardware-Software Integration | Serial Communication (UART / USB) | IoT Device Communication (MQTT) | GPIO-based Control & Automation | API Integration for Embedded Devices | Device Monitoring & Control Interfaces

TECHNICAL SKILLS

Python | PyQt | Raspberry Pi | ESP32 | Teensy 4.1 | MQTT | UART | GPIO | REST APIs | SQLite | RFID | VS Code

PROFESSIONAL EXPERIENCE

SOFTWARE DEVELOPER | DigitalMonk | Jalandhar, Punjab

August 2025 – present

Worked on Python-based application development and integration with embedded and IoT devices, including ESP32 and Raspberry Pi, enabling device communication, automation, and control.

PROJECTS:

MUSIC MAT PROJECT (ESP32 + MQTT)

- Developed a Python-based application to communicate with ESP32 using MQTT.
- Implemented real-time event handling for sensor-based inputs received from the device.
- Controlled music playback logic (song parts) through terminal/command-line interactions.
- Enabled device-to-application communication for monitoring and control via MQTT messages

SMART VENDING MACHINE (API INTEGRATION)

- Designed a PyQt-based UI for vending machine operations.
- Integrated REST APIs to accept orders from mobile and web applications.
- Coordinated UI actions with embedded vending controller responses.

TRS WORKOUT SYSTEM (PYQT + SQLITE)

- Built a PyQt desktop application to monitor workout parameters.
- Implemented angle and torque calculation logic with calibration features.
- Used SQLite for storing user data and calibration records.

COIN AND BILL ACCEPTOR SYSTEM

- Developed a GUI to monitor coin and bill acceptance events.
- Integrated GPIO-based signals to control product dispensing mechanisms.

FRIDGE VENDING MACHINE

- Created a PyQt-based UI to manage product selection and dispensing.
- Communicated with custom embedded vending controllers via serial interface.

DATA LOGGER APPLICATION (TEENSY 4.1)

- Developed a PyQt interface to communicate with Teensy 4.1 over serial.
- Displayed and logged real-time sensor data from the embedded device.

RFID KIOSK WITH PRINTER AND CARD DISPENSER

- Designed a GUI for RFID scanning, card dispensing, and printing operations.
- Integrated RFID reader, printer, and dispenser modules through serial communication.

EDUCATION

MASTER'S DEGREE Information Technology Guru Nanak Dev University	2023 – 2025
BACHELOR'S DEGREE Computer Applications Guru Nanak Dev University	2020 – 2023