

Dhananjay Gupta

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Objective

Embedded Software Engineer with 2 years of experience in developing and deploying embedded systems. Proficient in C, C++, and Python with a strong focus on Qt/QML for HMI development. Experienced in designing and implementing software solutions for automotive and IoT applications using Yocto Linux. Adept at cross-platform application development and GUI design using PyQt and Qt Design Studio.

Experience

- Pi - Square technologies** 08-02-2023 - Present
Associate Engineer - Embedded Application's Developer
In Pi square technologies my role is to focused on analyzing software requirements, designing and developing software solutions, and overseeing the integration and porting of software to various hardware platforms.

Skills

- Programming languages: Embedded C, C++, Python, QML
- Embedded development: NXP i.MX8M, STM32, AWR1843, Raspberry Pi, ESP32, Arduino
- Tools and IDE: Qt creator, Qt design studio, Qt designer (PyQt6), CCS, VS code, Git
- OS: Yocto Linux, Ubuntu Linux, Windows
- Protocols: I2C, SPI, UART, QSPI, Socket communication

Projects

- EVCi - Electric Vehicle Charging Infrastructure**
Description:
Developed a charging solution for three-wheeler and four-wheeler electric vehicles, featuring both AC and DC fast charging capabilities. The system includes mobile app connectivity, server connectivity, an HMI display for user interaction, and supports BLE, Wi-Fi, Ethernet, and LTE connectivity.

Roles and Responsibilities:
 - Developed the HMI using the Qt framework, handling both front end and back end (C++).
 - Built a Yocto Linux OS for NXP IMX8M, customized to project needs.
 - Integration of hardware and software components, for a seamless user experience.
 - Developed a State management system using Python and integrated it with Qt - based HMI for real time monitoring and control.
 - Design and developed the temperature control system for the charger.
- Intelligent Safety Patroller**
Description:
Contributed to the development of an advanced road safety system designed to enhance accident prevention. The ISP utilizes radar technology for object detection, identifying fast-approaching vehicles and calculating key parameters. It provides real-time alerts through audible and visual signals and records detailed data of detected objects in its memory.

Roles and Responsibilities:
 - Developed Embedded C code for touch buttons interfacing and management of various ISP unit modes, including flash memory erasure, RTC configuration and data extraction etc.
 - Independently designed and implemented a GUI using the PyQt framework to process binary files from the ISP unit.
 - The GUI provides an accurate visual representation of real-time object detection scenarios, covering both front-end and back-end development in Python.
 - Ensured integration of software with hardware for accurate system performance.

Personal Details

- Date of Birth : 19/10/2000
- Nationality : Indian
- Gender : Male

Education

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| • RV - SKILLS center for emerging technologies
Automotive electronics training
A+ | 2022-2023 |
| • IES, IPS Academy Indore
B.tech
8.1 CGPA | 2018 - 2022 |
| • New Pithampur public school
12th
72 | 2017 - 2018 |
| • New Pithampur public school
10th
81 | 2015 - 2016 |

Achievements & Awards

- Star Performer Award – Recognized twice for exceptional performance and contributions to project success and team goals.
- Embedded AI Certification – Successfully completed a course on Getting Started with Embedded AI | Edge AI on Udemy, enhancing AI integration capabilities for embedded systems.
- Advanced C Certification – Earned a certificate in Advanced C Programming from Microchip, demonstrating proficiency in low-level programming and memory management.