

# HARISH BILLUR

📍 Bangalore    ✉ harishbillur278566@gmail.com    ☎ +91-7676602966    in harishbillur    [github.com/harishbillur](https://github.com/harishbillur)

## About Me

---

### Aspiring Embedded Engineer

I am an aspiring Embedded Engineer with a strong passion for AI and Embedded Systems. With expertise in C, C++, Python, and Data Structures and Algorithms, I enjoy solving complex problems and optimizing systems for efficiency. My experience includes microcontroller programming with PIC18F4580, and I am always eager to expand my knowledge in embedded development and real-time system design.

## Education

---

### SSSDJVK Chikkamangaluru

*Sept 2013 – May 2018*

*High school*

- Grade: 79/100

### Vidyaniketan PU College Hubli(PUC)

*Sept 2018 – May 2020*

- Grade: 94/100

### Bangalore Institute of Technology(B.E)

*Mar 2020 – May 2024*

- CGPA : 8.7/10

## Experience

---

### HAL (Hindustan Aeronautics Limited)

*Sept 2023 – Oct 2023*

- HAL is one of the leading aerospace and defense manufacturers in India, specializing in aircraft production and avionics systems.
- Worked on the implementation of the ARINC-717 protocol, gaining hands-on experience in avionics data communication.
- Designed and tested circuits for ARINC-717 data acquisition, focusing on signal integrity and reliability.
- Conducted analysis and troubleshooting to ensure proper protocol implementation and data transmission.

### EMERTXE

*June 2024 – Present*

- Gaining in-depth knowledge of Embedded Systems programming using C and C++ with a focus on system optimization.
- Learning advanced concepts of Data Structures and Algorithms to improve problem-solving skills.
- Working on microcontroller programming using PIC18F4580, exploring peripheral interfacing, interrupts, and real-time applications.
- Developing and debugging embedded applications, enhancing skills in firmware development and low-level programming.

## Projects

---

### IoT-Based Gas Leakage Detection System

*2023*

- Designed a gas leakage detection system to enhance household safety by detecting and preventing gas leaks.
- Integrated MQ-2 gas sensor with GSM module for real-time alert notifications via SMS.
- Implemented an automatic buzzer alarm and LED indicator for instant local alerts.
- Developed a user-friendly LCD interface to display gas concentration levels in real time.
- Enabled remote monitoring by sending gas leakage alerts to a cloud platform for centralized tracking.
- Tools Used: MQ-2 sensor, GSM module, Buzzer, LCD display, LED, Arduino.

## IoT-Based Alcohol Detection System

2023

- Developed an alcohol sensing device that detects alcohol levels and displays results on an LCD screen.
- Implemented GSM module for sending alerts and notifications upon alcohol detection.
- Enhanced safety applications by integrating the system into vehicle ignition control.
- Tools Used: Microcontroller, Arduino IDE, MQ-3 sensor, GSM module, LCD display.

## Address Book



- Developed an address book application with functionalities to add, edit, delete, and print contact details.
- Implemented efficient file handling for persistent data storage.
- Tools Used: C language, VS Code.

## Steganography



- Implemented an image steganography system for encoding and decoding secret messages within BMP images.
- Utilized bitwise operations for data hiding while preserving image quality.
- Tools Used: C language.

## Car Black Box



- Designed a Car Black Box system using microcontroller programming for real-time vehicle data logging.
- Implemented functionalities including view log, clear log, set time using RTC, and download log.
- Enhanced accident analysis by recording critical vehicle parameters.
- Tools Used: C language, Microcontroller (PIC18F4580).

## Arithmetic Precision Calculator (APC)



- Developed an Arithmetic Precision Calculator (APC) in C for handling high-precision mathematical computations.
- Implemented addition, subtraction, multiplication, and division operations on large numbers beyond standard data types.
- Utilized dynamic memory allocation and string manipulation techniques to manage high-precision arithmetic.
- Tools Used: C language.

## Inverted Search



- Designed an Inverted Search algorithm to optimize data retrieval performance.
- Implemented dynamic memory allocation and efficient indexing techniques for query optimization.
- Tools Used: C language.

## Technical Skills

---

**Programming Languages:** C, C++, Python (Basic)

**Data Structures and Algorithms:** Proficient in designing and implementing complex algorithms.

**Microcontroller Programming:** Experience with embedded systems.

**Project Management:** Capable of managing end-to-end development of technical projects.

**Hardware Interfaces:** UART, SPI, I2C.

**Linux Internals:** Knowledge of system calls, process management, and memory management in Linux.

## Languages

---

- Kannada (Native)
- English (Proficient)
- Hindi (Proficient)