NAME : SUNIL

Email: sunilshirapurece@ gmail.com| Mob: +91-9731517870

**PROFESSIONAL SUMMARY**

Experienced Embedded Hardware Engineer with over 2+ years of expertise in designing, developing, and implementing embedded systems and hardware solutions. Proficient in Embedded C programming, communication protocols (CAN, I2C, SPI, UART), and microcontroller development (8051, Arduino Uno). Adept in motor drivers, relay drivers, power supply design, IoT applications, and analog and digital circuit design.

**Technical skill:**

* **Programming Languages:**  C, CAPL, Embedded “C”
* **Microcontrollers:** 8051, Arduino Uno, MSP8266
* **Operating System:** Windows
* **Software Tools:** Arduino IDE (Embedded “C”) and Kiel.
* **Communication Protocols:** CAN & UDS , I2C, SPI, UART
* **Hardware Design :** PCB design ,circuit design ,testing ,debugging
* **Drivers :** Motor ,Relay, Power supply, IOT, Wi-Fi , Bluetooth

**PROFESSIONAL EXPERIENCE**

**Embedded Hardware Engineer**

[E-logic embeddedT 14-3, 3rd Floor, Asian Business Centre**]** [ Kalaburagi 585101, Karnataka ] | [Jan2022 –Aug2024]

Designed and developed embedded systems using 8051 and Arduino microcontrollers for industrial and consumer applications. Implemented communication protocols (CAN, I2C, SPI, UART) to ensure seamless device communication. Developed motor and relay driver circuits, ensuring robust control for various electromechanical systems. Designed power supply circuits, including SMPS and linear regulators, ensuring stable and efficient performance. Conducted hardware testing, debugging, and optimization to improve system reliability. Collaborated with cross-functional teams to deliver IoT solutions, integrating sensors and wireless modules.

**Projects:**

* **Home Automation System using IoT****:** Control system for modern house is based on the Arduino family microcontroller. Features**:** Power saving, Water saving and Smoke fire detection. So, it saves huge electric bills by saving electricity, lights are only switched ON during night times or when visibility is poor. **IOT :** Definition the Internet of Things (IoT) is the interconnection of uniquely identifiable embedded computing devices within the existing Internet infrastructure.
* **Automatic Water-Level Controller:** The main aim of this system is to monitor the water level at rural areas so that they help in detecting the wastage of water and measures can be taken to avoid unnecessary overflowing of water in the areas where monitoring is a difficult task. The Arduino board, a microcontroller, is the main component of the system.
* **3D LED CUBE** (Academic project BE)

**Abstract:** The project is a 3D LED CUBE DISPLAY (8x8x8 PIXELS) which displays different patterns stored in the microcontroller**.** This LED cube is like a LED screen, but it is special in that it has a third dimension, making it 3D. LED display of 8x8 pixels are only 64 LEDs, but a LED cube in 8x8x8 is 512 LEDs, an order of magnitude harder to make! This is the reason LED cubes are only made in low resolution.

* **Applications of SCADA** (Academic project DIPLOMA)

**Abstract:** The aim of the project work is to protect the distribution transformer or any other power transformer, burning due to the overload, over temperature and input high voltage. Normally most of the transformers are burning because of these three reasons; hence by incorporating this type of monitoring and control circuits, life of the transformer can be increased.

**Roles and Responsibility**

**Hardware :** Communication Protocols like UART, SPI, I2C, CAN, RS232 etc. Power supply devices, power electronic, electronic components, regulators, Ac to dc converter, DC to DC converter. ADC, DAC, motor driver, relay driver etc. Analog and digital circuit designing, performing tests of new hardware and software, Trouble shooting and debugging performance issue, Interfacing of communication protocol with different kind of sensors.

**ACADEMIC QUALIFICATIONS**

BE in (E&CE) Appa Institute of Engineering ,Kalaburagi 70% Full Time 2014 - 2017

DIPLOMA in (E&CE) Govt. Polytechnic ,Kalaburagi 74% Full Time 2012-2014

SSLC S B High School, Kalaburagi 65% Full Time 2008-2009

**PERSONAL DETAILS**

• Date Of Birth: 1 may,1994

• Language Known: Kannada, Telugu, English, Hindi

• Gender: male

• Nationality: Indian

• Marital Status: Single

• Permanent Address: Sunil S Hirapur , 43 More complex brahmpur kalaburgi 585103.

**Declaration**

I certify that the information furnished above is factually correct and subject to verification.

Place:

Date: Sunil hirapur.