



KAPIL H. SONONE

RESEARCH AND DEVELOPMENT
ENGINEER



+91-7875272155



ksonone8@gmail.com



<https://github.com/ksonone>



Amravati, MH

TECHNICAL SKILLS

LANGUAGES :

Embedded C, microPYTHON, C, C++, Basic of JAVA, HTML, PHP, Javascript, mySQL

PROTOCOLS :

UART, I2C, SPI, TCP-IP, HTTP, MQTT

ARCHITECTURE :

- **8051 Series** : AT89C2051, AT89C51, NXP P89V51RD2
- **Arduino Series** : Atmega328P, Atmega2560, Atmega16
- **ESP Series** : ESP01, ESP12E/F, ESP32
- **Raspberry** : RP2040, RPi Zero-W, RPi 3B/3B+, RPi 4
- **Microbit**

TOOLS :

Keil, Arduino, Thonny, Processing, NodeRED, Fusion360, Ultimaker Cura, EagleCAD, KiCad, Fritzing, PROTEUS

OS KNOWN :

Linux (Debian, EduBOSS, Ubuntu, LinuxMint, Fedora), Windows (XP, 7, 8, 10), Raspbian Stretch, Buster

ADDITIONAL SKILLS :

Github, Github Desktop, NodeJS, NPM, SublimeText, POSTMAN, 3D-Printing

ABOUT ME

Insightful Research and Development Engineer having **2.5+** years of hands-on experience assisting in System design and firmware development in the field of Embedded Systems and IoT. Focused and dedicated professional possessing problem-solving skills. Seeking a suitable position in an organization where he can upgrade his knowledge in a suitable environment of growth and excellence in IoT and Embedded.

WORK EXPERIENCE (Total : 4.5+ Yrs)

Jan 2020 - April-2022

2.5 years of experience at "AVM Infotech (I) Pvt. Ltd", as a "**Research and Development Engineer**"

Research and Development Engineer

Nov 2019- Jan 2020

3 months of experience at "AVM Infotech (I) Pvt. Ltd", as a **Senior ATL Lab Trainer**

Sr. ATL Lab Trainer

2017-2019

2 years of experience in designing and development of Real time Embedded Systems Solutions for clients

Freelancer

EDUCATION

B.E. in Electronics and Telecommunication, PRMIT&R, Badnera, SGBAU-Amravati with CGPA - 7.46 in 2019

Project Topic : Smart Wheelchair for handicap

HSC, Brijlal Biyani Science College, Amravati with 60.83% in 2011

Project Topic : Clap Switch Circuit

SSC, Z. P. High School, Chandur (Rly) with 80.76% in 2009

PROJECTS HANDLED

1

Grobots IoT Controller Board : Project includes design and development of Hardware that can be re-programmed, communicate various sensors, motors, displays, AI, WiFi and Bluetooth Modules

Role : Team Lead, R&D Engineer

Duration : Jan 2020 - March 2022

- Team Lead and Responsible for Designing, Development, Testing of Hardware
- Prototype Designing, Schematic and PCB Design, Generating Gerber and BOM File for production, Communicating with PCB fabricators in case any technical queries and issues occurs
- Components Procurement, Assembly, Testing, Debugging
- Developing Firmware, Writing Custom Libraries for Sensors
- Working with various Analog and Digital Sensors, ADC, PWM, DC Motors, Servo Motors, Relay, Neopixel LED, LCD & OLED Display, WiFi Module, Bluetooth Module, HuskyLens
- work on UART, I2C, SPI, HTTP protocols
- Sketched and Designed CAD model of Enclosure for IoT Controller
- Design and Developed Sensor Adapter Module to interconnect with Grobots IoT Controller
- Design Product Manual, User Manual

2

Grobots Breezy Bot : Project includes design and development of Robotic Toy that can be re-programmed, communicate with fixed sensors, motors, display connected to it.

Role : Team Lead, R&D Engineer

Duration : Sept 2020 - July 2021

- Team Lead and Responsible for Designing, Development, Testing of Hardware
- Prototype Designing, Schematic and PCB Design, Generating Gerber and BOM File for production, Communicating with PCB fabricators in case any technical queries and issues occurs
- Components Procurement, Assembly, Testing, Debugging
- Working with IR Sensor, Ultrasonic Sensor, MQ2 Smoke Sensor, 8x8 LED Matrix Display 360 degree Servo Motors, Buzzer, Bluetooth
- Developing Firmware, Writing Custom Libraries for Sensors
- work on UART, I2C, SPI, HTTP protocols
- Sketched and Designed CAD model of Enclosure Body for Breezy Bot
- Design and Developed Product Manual and User Guide

3

Kodu IDE : Project includes design and development of Block-Based Programming IDE software tool for windows platform to program Grobots IoT Controller and Grobots Breezy Bot

Role : Team Lead, R&D Engineer

Duration : Sept 2020 - Jan 2022

- Team Lead and Responsible for Designing frontend UI, Sensor Blocks
- Categorize Blocks according to Features and Working for various Operation
- Multi-Langual Support - Included Marathi, Hindi and Gujarati Languages along with Default English
- IDE Supports both Block based Coding and Text Based Coding
- Auto generate Code snippet on connecting blocks in Sequences
- Integrated code Compile and Upload feature
- Implement Auto Detect USB Port on connecting respective Board to System
- Design and Testing Hardware Profile Configuration Panel
- Develop Serial Monitor Terminal
- Generate (.EXE) executable standalone setup file to deploy on Windows OS system
- Version Control and auto update features for future scope and modification

PROJECTS HANDLED

4

Grobots RPi Trainer Kit : design and development of Raspberry Pi based Hardware that can be program using python and communicate various A/D sensors, motors, displays

Role : Team Lead, R&D Engineer

Duration : Jan 2020 - March 2022

- Team Lead and Responsible for Designing, Development, Testing of Hardware
- Customising Raspbian Linux OS Pre-Programmed Activities to work with Raspberry Pi 3B+ and Raspberry Pi 4 Board
- Prototype Designing, Schematic and PCB Design, Generating Gerber and BOM File for production, Communicating with PCB fabricators in case any technical queries and issues occurs
- Components Procurement, Assembly, Testing, Debugging
- Setting Up Python3 as Default Programming Language, adding various sensor libraries
- Working with on-board 17 Digital Sensors including DC Motor, Servo Motor, Stepper Motor, Relay, Keypad, LCD and OLED Display
- work on UART, I2C, SPI, HTTP protocols
- Design Product Manual, User Manual along with 25 Pre-Program Activities

5

Wireless Monitoring of DC Track Circuit Parameter : Project includes development of Hardware to monitor voltages and current across battery and charger of DC Track Circuit with data logging

Role : Freelancer

Client : Indian Railway

Duration : 3rd Oct 2022 - 2nd Nov 2022

- Responsible for Designing, Development, Testing of Hardware
- Design PCB with Power Section, ESP32 Board, Ports to Read Voltages and Current across battery and Charger
- Working with ADC, Voltmeter Designing, Current Module, RTC Module
- Firmware Development to read all voltages and current values using 3- Modes, A) USB, B) Bluetooth and 3) IoT Cloud and logged them in real-time on both in-system and on IoT Cloud
- work on UART, I2C, RTC, HTTP, MQTT, Bluetooth and WiFi protocols

6

Smart Geyser Switch : Project includes development of IoT enabled Hardware and Software to control temperature of Geyser using Android Device

Role : Freelancer

Client : TUT Technologies Pvt. Ltd.

Duration : 15th Oct 2022 - 10th Nov 2022

- Responsible for Designing, Development and Testing of Hardware and Firmware
- Design PCB with on-board Power Supply Section, ESP12E Board, Ports to connect Thermister and Geyser
- Working with ESP12E ADC, Thermister and Relay module, UART and WiFi protocols
- Firmware development with WiFi Credential Configure Facility to user, on-board Server, Design webpage having buttons to ON and OFF Geyser, Temperature Gauge to See Current Temperature Module and Sliding Switch to select Temperature value

PERSONAL DETAILS

Father's Name : Mr. Hansraj P. Sonone

DOB : 27/10/1993

Hobbies : Playing Harmonium

Current CTC : 4.54 LPA (No PF deducted)

Expected CTC : as per market standards

Notice Period : Immediate Joiner