Hari prasath Chandrasekaran

# Embedded Software Engineer

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# Summary

* Having **3 years and 6 months** of total experience as **Embedded Software Engineer** in **Industrial automation domain , Automotive domain and Test Automation**
* Strong Experience in design of user and system interfaces using communication protocols **UART, SPI, I2C** and RS232 using **Embedded C**.
* ­­­­­Experience in creating Test Scripts in **Test Automation Framework** based on **Python**
* Having hands-on in **CDD(Complex Device Driver) area development in AUTOSAR Architecture in Automotive domain.**
* Having Hands-on in Automation TestBench Setup preparation and **DevOps** tool- **Jenkins**.

# Work History & Responsibilities

**Embedded Software Engineer | JULY 2021 – OCT 2022 ||** *Kalycito Infotech Pvt.Ltd, Coimbatore.*

* + Working as Embedded Developer and Test Automation assistance for Customer – Bosch Global Software Technologies.
  + Collaborated with clients from concept through final delivery of product or service.

**Embedded Software Engineer | FEB 2018 - AUG 2020 ||** *New Qbitronics, Coimbatore.*

* + Managed creative projects from concept to completion while managing outside vendors.
  + Collaborated with clients from concept through final delivery of product or service.

# Skills

**Programming Languages** : **C**, **Embedded C**.

**Scripting Languages** : Python, Linux Shell scripting

**Operating system** : **Windows**, Linux, QNX

**Test Automation Framework** : Robot Framework, Python based Proprietary framework

**Devices : PIC 8 bit microcontrollers, Renesas controller, Qualcomm SoC,** ESP8266 NodeMCU, Raspberry Pi 4 Model B, Renesas E1/E2 Emulator/Debugger, PicKit, CANoe 10/15, Saleae Logic analyzer/ Oscilloscope

**Wired Protocol** : **I2C, SPI, UART**, RS232.

**Wireless Protocol** : **WiFi** (ESP8266)

# Tools

**Version Control :** Git, Gerrit

**Dev-Ops :** Jenkins

**Software Tools** : MPLAB X IPE, Renesas Flash programmer, Putty/ Terra term, DLT trace viewer, Logic analyzer

**IDE : MPLAB 8.92 IDE**, **MPLAB X IDE,** Renesas Multi Debugger/Emulator**,** , **PIC CCS IDE, Pycharm**, Arduino IDE, Keil uVision 5 IDE

**Project/Task management :** IBM Rational Tool (RTC), JIRA

# Software Development Methodology

Agile, Waterfall

# Project Details

## Automotive – Life Cycle Management

**Role :** Embedded developer & Test Automation Specialist

**Organization :** Kalycito Infotech Pvt.Ltd

**Customer** : Bosch Global SW Technologies

**Duration :** July 2021 to Till now

### Team size : 9

**Controller :** Renesas, Qualcomm SoC

**Languages :** Embedded C, AUTOSAR, Linux Shell scripting, Python

**Protocols :** SPI, CAN, UART, RS232

**Software :** Renesas flash programmer, Multi Debugger, Pycharm, Putty, CANoe 10/15

### Description :

Life Cycle management is responsible for Voltage handling, Reset handling and Watchdog Supervision handling in Automotive Infotainment project.

### Contribution :

* Implemented new feature for Power Management IC Supervision and presented demo for Customer.
* Created multiple Automation Test Script to validate the quality of features implemented where the testcases will be executed on daily basis for evaluating the reliability of SW.
* Prepared multiple TestBench for automation scripts to be executed for regression testing and reliability Testing on daily builds pipelined from Gerrit using Jenkins.
* Done bug validation and bug fixes by handling joint debug sessions.

## Automatic Power Factor Controller

**Role : Embedded Software Engineer Organization :** New Qbitronics

**Duration :** February 2019 to December 2019

### Team size : 4

**Controller :** PIC18F46K22, NodeMCU (ESP8266)

**Languages :** Embedded C

**Protocols :** SPI, UART, Wi-Fi(ESP8266)

**Software :** MPLAB X IDE, Arduino

### Description :

Industries with heavy inductive load faces economical threat called Power factor which not only results in power wastage, but also brings up heavy fines from electricity vendors due to potential threat of transformer or transmission line failure. Hence, we designed power factor controller to monitor and automate capacitor banks to regulate power factor.

### Contribution :

* Worked in **device driver** programming to interface **LCD, EEPROM** and **ADC** with PIC controller.
* Interfaced **ADE7758** IC with **PIC18F46K22** microcontroller using **SPI protocol**
* Worked in Relay control module and Software integration.
* Coded and Debugged the program as per client requirements.

## Automatic Mains Failure Controller

**Role : Embedded Software Engineer Organization :** New Qbitronics

**Duration :** May 2018 to December 2018

### Team size : 3

**Controller :** PIC18F4520, NodeMCU (ESP8266)

**Languages :** Embedded C

**Protocols :** I2C, UART, Wi-Fi(ESP8266)

**Software :** MPLAB 8.92 IDE, Arduino

### Description :

Power failures and irregularities in power are quite common in high current industries. To avoid damage of instruments and improve productivity, Diesel generators are used for power backup. We provide automation solutions for automatically turning ON and OFF Diesel generators as per client requirements.

### Contribution :

* Requirement gathering.
* Worked in **device driver** programming to interface **LCD, EEPROM** and **ADC** with PIC controller using **I2C protocol**.
* Worked in Relay control module and Software integration.
* Coded and Debugged the program as per client requirements.

# Education

**BACHELOR OF ENGINEERING |** JULY 2012 - MAY 2016

Akshaya college of Engineering and Technology, Kinathukadavu. Major: Electronics and Communication Engineering

CGPA: 6.87

**CLASS XII |** APR 2011 - MAY 2012

Srinivasa Vidhyalaya Hr.Sec School, Udumalpet. Percentage: 77.92

**CLASS X |** APR 2009 - MAY 2010

RKR GRKS Matriculation Hr.Sec school, Udumalpet.

Percentage: 93.5

# Personal Details

* + Date of Birth - 23/11/1994
  + Languages Known – Tamil, English
  + Marital Status - Single
  + Nationality – Indian

# Declaration

I hereby declare that all the above details are true to the best of my knowledge.