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**Kolluri Sai Srikar**

**Embedded Software Engineer**

 **Summary**

* Embedded Engineer with 3+ years of experience in requirement analysis, designing, developing, porting, and validating Embedded Software for microcontrollers and processors.
* Knowledge of various embedded products: modem / WIFI routers / last meter telecommunication products, network - enabled set-top box media player products and embedded system for automotive application.
* Experience in working on IAR C Compiler, Keil C debugger environment on various microcontrollers.
* Proficient in design, development and testing of embedded firmware/software development for real time multithreading/multitasking embedded applications.
* Knowledge of electrical circuits, prototype and manufacturing design, testing, debug, rework, soldering and assembly.
* Good knowledge of firmware specifications from product requirements documents that help hardware engineers and debug initial prototypes.
* Knowledge of digital and analog oscilloscopes, logic analyzers, PC based simulating systems for Microprocessors, signal generators, etc.
* Experience in fiber optics, project management, systems design and equipment design.
* Knowledge of Hardware Design and High-Speed PCB Layout.
* Good knowledge of hardware lab equipment such as Oscilloscope and logic analyzer.
* Working Knowledge of ISO OSI stack and Network Protocols like TCP/IP, UDP/IP and Embedded Ethernet.
* Proficient in Embedded Linux kernel programming, kernel migration, developing kernel loadable modules.
* Good Client relationship management, analytical, problem solving, written and oral communication, and presentation skills.

 **Education**

**Master of Science in Electrical Engineering**

University of Bridgeport, School of Engineering, CT

**Skills**

C, C++, Embedded C, Assembly language, Python, Circuit design, debug, Code debug, Soldering, Assembly, scilloscope, Signal generator, Digital Voltage meter, TCP/IP, UDP, PCB, CodeVisionAVR, Energia, Keil uVision5, ARMSim, MATLAB, Eclipse, Linux, Solaris, Embedded OS, Atmel, ARM Cortex-A8

**Experience**

**BlissLights, LLC. San Marcos, CA | August 2019 - Present**

**Project: Alexa-voice controlled lighting product**

**Role: Firmware Engineer**

**Tools: Alexa AWS, Arduino IDE, Alexa skillset**

**Hardware: ESP8266/ESP32, Oscilloscope, Multimeter, Function generator**

**Languages: Arduino C.**

**Description:**

* In this project firstly a Alexa skill set is created where each sentence to control the product is registered in the database, voice commands via Alexa are used to control the hardware to turn on/off and cycle through the different modes. For these voice commands to work framework is created in AWS Lambda, built-in frameworks are used to create a basic algorithm for Alexa to understand voice commands uttered. AWS Lambda calls the node.js to act upon on each voice command uttered and invoke respective function calls. These function calls communicate through the MQTT method or Shadow MQTT method and connect the ESP8266 through Wi-Fi server to toggle GPIO pins or transmit and receive data Via Wi-Fi to AWS servers.

**Project: Bluetooth controlled lighting product**

**Tools: Arduino, Microchip IDE, Android Studio, Photoshop**.

**Hardware:** **HC-05,06, PIC controller 16bit and 32-bit, programmer Oscilloscope, Multimeter, Function generator**

**Languages:** **Embedded C, Java(Android studio).**

**Description:**

**Hardware**: It consist of 16bit MCU PIC controller with laser driver and timer circuit, SD card reader for storage and for communication HC-05 Bluetooth module. (DOE)Diffractive Optics elements and Aspheric lenses setup to create multiple patterns in each angle of diffraction.

**App control**: Designed UI and algorithm for various control functions on the product and tested them

**Working**: the product consists optical parts which move the laser driver on to the DOE grating to create a pattern while changing the LED color according the mood. The timing is controlled using the MCU. Brightness and Speed of the effects are controlled via UART to LED driver and motor driver. And all these commands are controlled from Smartphone App via Bluetooth module.

**Project: Assembly engineering and RMA (Returns and merchandise authorization)**

**Role: RMA assistant**

**Tools/Hardware: Soldering gun, Hole Driller.**

**Description:**

Assembling and testing of laser projectors: While working as an assistant I had to assembly laser projector which consists of metal enclosures, optics, and electronics. Power supply circuitry connected to electronics consists of laser driver, motor driver and various sensors all working on an MCU timer circuit. To create patterns from DOE diffraction lens with specifically timed asynchronous motors with optics diffracting the lasers.

During RMA: Repairing the products testing and problem solving. Receiving RMA testing for problem fixing the issue testing them and packaging

**Lightvision, Taoyuan, TW**

**(as a part of BlissLights)**

**Project: Quality Control and Quality Analysis**

**Role: Assistant Production engineer**

**Tools:** **Excel.**

**Hardware:** **Lumen meter, Wavelength, Laser power tester, Oscilloscope, Multimeter, Function generator**

**Description:** **Project consisted of various responsibilities:**

QA and QC for Skylite and Starport in Taiwan

Production design, QC, QA, and management

Design and Development for the new products for Blisslights

**Leviton Manufacturing Co Inc. | Sep 2018 - July 2019**

**Roles: Embedded Software Engineer**

**Responsibilities:**

* Lead Firmware Engineer for product development on wireless communication through BLE 4.2
* Developed and implemented algorithm for BLE 4.2 mesh between a master BLE node and N BLE slave.
* Firmware programming on Cypress BLE chip to control output and read data from smartphone app.
* Implemented Over-the-Air (OTA) firmware upgrade feature through BLE in product firmware.
* Gathering sensor data through I2C, SPI or UART and sending over BLE to smartphone app or central BLE nodes.
* Developed firmware for host I2C microprocessor communicating to NFC chip and controlling output on sending commands from smartphone app through NFC wireless technology.
* Documented and reviewed software design procedures on a regular basis.
* Understanding architecture of iOS and android phone BLE stack, work with app developer to get functionality working with embedded firmware of BLE chip.

**HEVO Inc, India| Apr 2018 - Aug 2018**

**Roles: Electrical Engineer**

**Responsibilities:**

* Developing driver and programming RN-42 Microchip BLE using STM 32-bit microcontroller for wireless data transmission.
* Designing and assembling dual layer PCB for RN-42 BLE.
* Testing RN-42 breakout board and inverter used in wireless charging of automobile vehicles.

**Adons Softech, India| Jan 2015 - July 2016**

**Roles: Embedded Software Engineer**

**Responsibilities:**

* Component design and simulation using MATLAB/ Simulink.
* Developed embedded Linux C++ USB driver software for Intel ARM XScale processor.
* Designed, coded, tested the integration of software for a real-time, multitasking DSP based receiver system.
* Designed and developed embedded real-time control system software using C++ coding in VxWorks (RTOS) environment.
* The robotic arm stepper motors with the programmed ARM based microcontroller was employed to control the nozzle movement.
* Developed an application for high power electromotor protection. It included Microchip PIC 17C756 micro-controller, SPI, I2C, RS-232 ESD protected interface and Microchip serial EEPROM for storing user specified constants.
* Analog/Digital/Power/Embedded Electronic & PCB Design and Trouble-Shooting
* Completed tasks that embedded C and C++ were used Eclipse, Energia, and Keil uVision embedded C Integrated Development Environments.
* Developed a gain prediction database using Python, and MATLAB on a Linux platform.
* Embedded software performed real-time tracing of 6 analog input channels, time-dependent turn off control
* Strong ability to layout PCB and troubleshoot at the PCB component level.
* Developed a gain prediction database using Python, c-shell scripting, and MATLAB on a Linux platform