Prem Acharya

Contact Information

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Education

California State University Los Angeles **Mar 2016**
M.S. Electrical Engineering

Ganpat University, Gujarat, India **May 2014**
B.Tech. Electronics & Communication Engineering

Professional Experience

Shelton Software Services, Firmware Engineer **Oct 2016 – Present**

- Developed device drivers including UART driver for communicating with ARM Cortex-M3 (EFM32) based Human Implantable Pump using C/C++.
- Implemented the radio communication link for sending the commands to the pump using Silicon Labs' SI4464 radio.
- Responsible for developing, testing and documenting firmware drivers.

Alfred Mann Foundation, Firmware Engineer **May – Sep 2016**

- Developed Bluetooth Low Energy, Low Power Management, ADC, RTC, flash and watchdog drivers for ARM Cortex-M4 (MSP432) based Human Implantable Respiratory Sensor following object oriented and event driven design patterns using C/C++.
- Performed unit testing for the implemented firmware modules and completed documentation.
- Collaborated in the board bring up and schematic design review.

Mantra Softech Pvt. Ltd., Embedded Systems Engineer **Jan – Aug 2014**

- Developed a proof of concept machine for fingerprint-based voting using 8-bit microcontroller AT89S52, fingerprint sensor and EEPROM AT24C02.
- Programming for the device was done in C language.
- Responsible for programming, hardware interfacing and testing of the device.

Tools & Technologies

Software: Code Composer Studio, Simplicity Studio, Gitlab, Mercurial, Keil Vision, Xilinx ISE, Arduino, Opnet, VeriLogger Pro, PSoC Creator and Programmer, Altera Quartus II

Languages: C/C++, Python, LabVIEW, Verilog HDL, Assembly, Java, Simulink

Communication Protocols: UART/USART, RS-232, Wi-Fi, Bluetooth

Tools: JTAG, Oscilloscope, Logic Analyzer, Waveform Generator, DMM

Projects

Audio Equalizer using DAQ and LabVIEW **Sep – Dec 2015**

- Created an Audio Equalizer by using DAQ and signal processing in LabVIEW.
- Tested using an audio input via aux cable to DAQ and obtained desired sound output.

Modified MIPS Lite (MML) multi-cycle design project **Sep – Dec 2015**

- Drafted the 16-bit multi-cycle datapath for Modified MIPS-Lite (MML) ISA.
- Programmed the memory file, register file, ALU and ALU controller using Verilog HDL.

Temperature and fire protection system **Sep – Dec 2014**

- Created a temperature and fire protection system using ARM Cortex-M3 based PSoC 5.
- Developed the software using C for temperature Sensor TMP36 and smoke Detector MQ-2.

Microcontroller based moving message display **Jul – Dec 2013**

- Created a moving message display using 8-bit uC AT89C51 and a 16-segment LED display.
- Developed the software using C which would display moving messages over the LED.