

Nischita Haldipurkar

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EDUCATION

Master of Science in Electrical Engineering, *The University of Texas at Arlington*

Jan 2019 – Dec 2020

Bachelor of Engineering in Electronics, *University of Mumbai*.

May 2014 - May 2018

SKILLS

Embedded Concepts: Debugging, Computer Architecture, ARM Architecture, Operating systems.

Languages: C, C++, Embedded C, Circuit Python, ARM Assembly.

Software: Visual studio, Code composer studio, Lt spice, MATLAB, SIMULINK, Eagle, Arduino Ide, GIT.

Protocols: UART, SPI, I2C, CAN, GPIO, BLUETOOTH, TCP/IP, ADC.

Micro- Controllers: Adafruit Metro M4, Tiva TM4C123GH6PM, Bluetooth LE Module, Arduino Uno, Arduino Mega, STM32 Micro-controller.

WORK EXPERIENCE

Embedded Software Intern– UT Arlington Research Institute, Fort Worth, TX

June 2019 – Present

- Developed Firmware on Adafruit's metro M4 Micro-controller for Smart Seat Cushion using C++ and Circuit Python
- Designed PCB schematics using EAGLE PCB software
- Interfaced Bluetooth LE Module to perform serial communication to obtain commands from Pressure Sensors.
- Integrated DDS AD9850 Module to generate sine wave to track vibration levels on pressure bubbles using IMU's, connected using I2C
- Connected Different Peripheral Devices using SPI with usage of NXP 33996 De-mux chip

Research and Development Intern- Siemens Ltd Mumbai, India

Jun 2016 - Jul 2016

- Studied PCB designing and performed soldering of components in Buck-Boost Converter
- Designed various switch gear devices and studied Contactor testing
- Studied Programming of AtMega Micro-controllers and ARM Micro-processors

ACADEMIC PROJECTS

ARM-Cortex M4 Peripheral Driver Development (Embedded C)

Jan 2020 – Jul 2020

- Developed and configured Low-level peripheral drivers such as UART, I2C, GPIO and SPI protocols on Tiva M4 Microcontroller

Real-Time Operating System (Embedded C)

Jan 2020 - May 2020

- Designed a Co-operative and Pre-emptive RTOS on C using ARM Cortex M4F Micro-controller.
- Programmed Kernel OS functions with support for Semaphores, Yielding, Sleep, Mutexes, Debug Interface, Priority Scheduling and Priority Inheritance, Multi-Threading and Multi-Tasking and Inter-process communication
- Performs various functions such as Task switching and Service Calls that are handled by Interrupt Service Routine.

Programmable Pulse Generator (Embedded C)

Aug 2019 - Dec 2019

- Development Board used is TM4C123GH6PM (CORTEX M4) and built hardware with PCB designing.
- The command is given from UART (Terminal Window) that generated different waveforms like sine, square, triangle, Hilbert transform waveforms and square with programmable duty cycles on the oscilloscope.

SDRAM Controller Interfacing from 80386DX to SDRAM (Paper Design)

Jan 2019 -May 2019

- Designed a SDRAM Controller that allows SDRAM memory MT48LC8M8A2 to be interfaced with 80386DX Microprocessor
- 80386DX is the microprocessor that supports asynchronous memory support.

Low Cost Multi-Meter (Embedded C)

Jan 2019 - May2019

- Developed an LCR Meter using Tiva C Series TM4C123GH6PM Micro-Controller Kit.
- The Meter is capable of measuring Resistance, Capacitance and Inductance of a Component fixed between the terminals when the commands are sent to the controller using UART Communication.