Ashvin Roharia

Firmware Engineer

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PROFESSIONAL EXPERIENCE

Silicon Labs Austin, TX

Firmware Engineer Radio Software Team Mar 2020 – Present

Radio Abstraction Interface Layer Library

- Developed app to analyze library's RAM/stack and flash usage after each commit
- Worked on fixing bugs in RAIL library

Firmware Engineer IoT Software Development Team Jan 2018 – Mar 2020

Boot Code

- Sole developer of the boot ROM and bootloader for next-gen 8-bit MCUs
- Boot ROM is entered on MCU reset and debug interrupt vector to handle startup
- Bootloader is entered if there's no user code or on a boot pin to load applications

Bluetooth Xpress – Serial to Bluetooth Bridge

- Developed low-power embedded software demos for new BLE products for embedded systems conferences and a customer facing SDK
- Create streaming tests to allow long term reliability testing and throughput measurements
- Validated new customer facing board revisions

USB Xpress – USB to UART Bridge

- Released updated library after fixing multiple bugs and customer requests
- Added new features; user suspend configuration, zero-length-packet termination, etc.
- Set up library builds in Jenkins

Firmware Engineer Intern IoT Software Development Team May 2017 – Aug 2017

Touch Xpress – Capacitive Button Controller

- Created python module to control a capsense testing robot
- Added touch detection analysis to allow platform to characterize a touch as pass of fail
- Setup an automated capsense test platform using grounded pads to simulate touches

Intel Austin, TX

Firmware Engineer Intern IoT SoC Power Management Team Mar 2016 – Aug 2016

- Worked on the power management controller on a pre-silicon IoT SoC
- Fixed multiple firmware bugs on Linux involving cloning, building, testing, and team communication
- Analyzed waveforms on Verdi to debug an issue
- Ran emulation test which involved cloning, changing parameters, and running scripts

AMD Austin, TX

Validation Engineer Intern Server Validation Team Aug 2015 – Jan 2016

- Involved in a customer issue as the sole tester for microcode patches in the team
- Loaded microcode patches, set conditional breakpoints in HDT, and helped brainstorm fixes for the issue
- Tested SATA ports on ARM server chip revisions through python scripts for 2 bringups
- Built a GUI using XAML, C#, and python in Visual Studio to replace an outdated GUI used to test chips

Malauzai Software, A Finastra Company Austin, TX
Team Lead Software Engineer Intern Mobile App R&D Team May 2015 – Aug 2015

- Led a team of three interns to research competitor's mobile app designs and features
- Used Ruby to automate the process of looking up banks in the iTunes store

Software Engineer Intern Software Development Team May 2014 – Aug 2014

- Found and reported bugs in our mobile banking app on iPhones, iPad, and Android
- Worked with mentor to fix bugs in objective-C and JAVA

EDUCATION

Georgia Institute of Technology Atlanta, GA
Master of Science, Computer Science Aug 2020 – Present

The University of Texas at Austin Austin, TX
Bachelor of Science, Electrical & Computer Engineering Aug 2013 – Dec 2017
I. Software Engineering and Design
II. Embedded Systems

C	8051/ARM Assembly	Python	JAVA	C++	HTML	CSS	VHDL	English	Hindi

Oscilloscopes	Logic Analyzers	USB Protocol Analyzer	Git

PROJECTS

Acoustic Event Detection Algorithm & GUI

- Developed a Python script to train a kNN (machine learning) and classify real-time audio
- Developed a real-time Python GUI to display the mic audio signal, frequency spectrum, and classification

Facebook API Data Gathering & Analysis

- Worked on a Python script to convert a Facebook page into a CSV file
- Used JavaScript to create interactive graphs based on the scraped data
- Designed an HTML website for users to visualize the Facebook data analytics

Automated Website Testing

- Created a browser-based regression automation test suite for a web application
- Test suite involved automating button presses, populating text fields, and validating
- Used Java and Selenium to generate the 256 tests needed for full coverage

GroupMe API Data Gathering & Analysis

- Worked on a Python script to convert a group chat transcript into a JSON file
- Created a Python script to display multiple stats analyzed from the JSON file
- Designed a GUI for both scripts to allow for public usage

Active Noise Cancellation Embedded System

- Designed a PCB to interface between our code and the LCD screen, mic, headphones, DAC, ADC, etc.
- Used C to develop the active noise cancelling algorithm
- Filmed a YouTube video demonstrating and explaining the embedded system