Portland, OR
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Mustafa Alshehab

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Employment

Software Engineer **ON Semiconductor** **Jun 2018 - Present**

- Embedded/Firmware/ Back-end development: C/C++ | Qt | ARM | Bluetooth Low Energy (BLE) | UART | I2C
  - Developed a feature for Strata Developer Studio to communicate to a client wirelessly within a local network
  - Maintain and support the development of Strata Developer Studio
  - Developed firmware for bare-metal MCUs to communicate serially with Strata Developer
  - Developed a firmware with both BLE GAP peripheral/central roles and GATT server/client roles to search, connect, and exchange data with other BLE devices
  - Leveraged knowledge in C/C++, Qt/QML, CMake, Git, TCP/IP, ARM Coretex-M3 architecture, Memory Pool, debugged using Oscilloscope, Digital Multimeter, and JTAG/SWD debugging interface
- DevOps: Docker |Jenkins | Linux | Windows| SDK | Qt installer
  - Reduced dependencies conflict by 50% by eliminating multiple OS build support by utilizing Docker containers to unify the embedded build environment for both macOS and Windows
  - Created and maintained Linux Ubuntu Docker image with the tools/dependencies to build firmware
  - Automated the build process by using Bash scripts, CMake, and a modified VS Code interface
  - Reduced start of Strata development time by 90% by making an SDK installer with concise documentation
  - Reduced building time of Strata Developer Studio by 70% after the initial build
  - Developed a way to automate firmware submission to support OTA by utilizing Jenkins pipeline
  - Automated Strata Developer Studio release testing utilizing Python and PowerShell scripts
  - Leveraged knowledge in Docker, Jenkins, CMake, Windows WSL, JavaScript, Bash scripting, PowerShell, Linux, MacOS, Windows 7, Windows 10, Qt installer, Inno Installer, Microsoft VS Code
- GUI and Front-end Development: Qt/QML | React | Redux | MongoDB
  - Developed QML interface for MQTT protocol along with a GUI for testing
  - Developed a reusable React component to show analytics data in a graph
  - Leveraged Knowledge in Qt/QML, JavaScript, C++, NPM, React, Redux, MongoDB, HTML, CSS

Teaching Assistance **Oregon State University** **Sep 2016 – Mar 2017**

- Hold weekly student help sessions and plan out homework with other TAs for the computer science II course

Education

Corvallis, OR **Oregon State University** **Apr 2013 – Sep 2017**

- Bachelor of Science: Electrical and Computer Engineering – GPA: 3.36 out of 4

Personal Projects

- **Optical Heartrate Monitor**
  - Developed an Android application to represent and record heartbeats received via Bluetooth
  - Utilized I2C and UART communications protocols, Arduino Uno board, HC-04 Bluetooth module, Maxim Integrated heart-rate sensor, Git, Arduino IDE
- **Calculator for iOS and Android**
  - Developed a simple mobile calculator that runs on iOS and Android
  - Utilized React Native framework, NPM, JavaScript, Git, and VS Code
- **Personal VPN (Virtual Private Network)**
  - Created a personal VPN to access home devices on the go and encrypts traffic on public networks
  - Utilized OpenDNS, Raspberry Pi, Python, TCP/UDP, SSH, Unix CLI

Skills

Programming Languages: C/C++, QML, Python, JavaScript, HTML, CSS, and Shell scripting (Bash)
Tools: ARM toolchain, JTAG, RTOS, CMake, Git, Docker, React, React Native, Redux, and NoSQL (MongoB)