JOHN GRENARD

Embedded Software Engineer
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www.JohnGrenard.com

EXPERIENCE

Garmin 2012 - Present
Senior Embedded Software Engineer Salem, OR

- Formally develop and certify safety-critical, real-time software for aircraft communication, navigation, and display systems.
- Design and develop protocols, algorithms, and task architecture solutions for inter-product communication, hardware interface, and human machine interface.
- Perform root cause analysis for inter-system and inter-process issues involving resource contention, communication, etc.

Creative Microsystems 2010 - 2012
Intern / Electronics Tech Renton, WA

- Manufacture, test, and debug Intel 8051 based display and processing units for on-board truck scales, and other industrial equipment.
- Create and implement environmental test procedures to verify equipment operability in extreme conditions.

Fromel Electronics 2008 - 2010
Director of Operations / Electronics Tech Seattle, WA

- Manufacture, modify, test, and debug analog circuits for guitar pedals and amplifiers.
- Create manuals, keep records and inventory, train employees.

PERSONAL PROJECTS

Keg Master – 2019 KegMaster.io/Video
Smart Beverage Fridge KegMaster.io/Docs

Utilizing Azure Web Services, the Azure Sphere development board, a custom PCB, and various hardware, I created an application and embedded software along with an IoT interface to allow hardware control and bi-directional communication between an iOS application and a smart beverage fridge. All of this was developed from start to finish in about three months and submitted as part of a competition hosted by Hackster.io.

ATLAS UAV – 2012
Thrust Vectoring UAV

A thrust vectoring quad rotor that I worked on as part of independent study while attending the University of Washington, which utilized dual PIC MCU's interfaced with various controls and sensors via a custom PCB that I also designed and created. This project included interface to Bluetooth, an Inertial Measurement Unit, motor controllers, serial servos, and more, from two MCUs running FreeRTOS and a custom kernel.

OBJECTIVE

A detail oriented and dependable engineer with a tenacious, results-driven focus. John is looking for opportunities where he can combine his passions for learning and for solving difficult problems with efficient and effective embedded solutions.

In the course of his experience, John has designed a pipelined MIPS processor at the logic level, drivers, and other processing solutions for both direct interaction with hardware and for interface with external MCU-based peripherals. While he has a strong background in developing full featured M2M, HMI, and IoT solutions, his strengths also encompass embedded hardware, including schematic and PCB design.

SKILLS

- Firmware
- Protocols
- Documentation
- Software Test
- Code Review
- *Circuit Design*
- *PCB Design*
- Software Architecture
- Embedded Systems
- ARM / PIC / AVR MCUs
- Single Board Computers
- Interprocess Communication
- Root Cause Analysis
- HW / SW Integration

TOOLS

- Git
- CI/CD
- JTAG
- *Altium*
- *Eclipse*
- Logic Analyzer
- Jenkins
- Oscilloscope
- Visual Studio and other IDEs
- *Matlab / Simulink*

LANGUAGES

C
Python
Many Others

EDUCATION

University of Washington
B.S. Electrical Engineering
Embedded Computing and Control Systems
2012 Seattle, WA