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I am an embedded systems designer who has worked primarily in the rf industry, and has experience with the full software & firmware development cycle as well as hands-on experience in electronics manufacturing.

While most of my experience has been with embedded systems and with automating test equipment, I am also interested in other types of software development.

I have experience with remote work, and I have a distraction-free work environment including a basic electronics lab.

SKILLS

Git, SVN, Linux, DOS, Bash, command line, shell scripting
C, Python, Java, HTML/CSS/JS, currently learning Rust
Bare-metal firmware, unit testing, static analysis, board bring up, debugging
Digital circuit design, including microcontrollers (mostly Microchip PIC processors)
Design for manufacturability and design for test
Schematic capture and PCB layout
Single Board Computers and industrial mcu boards
Communications protocols and interfaces such as GPIB (HPIB, IEEE-488), USB, SPI, I2C, UART (RS232, RS-485, RS-422), TCP/IP, UDP
Automation of test equipment such as network analyzers, spectrum analyzers, oscilloscopes, signal generators, DMMs etc.
Testing, calibrating, and troubleshooting digital, analog, and rf circuits
Experience working with legacy code and older languages and with porting applications between languages/platforms
Personal experience with Raspberry Pi, Beaglebone, Arduino / Atmel, SDR, IOIO, Android, Unity3D, Virtual Worlds (OpenSimulator)

WORK HISTORY

TelGaAs Inc. O'Fallon, MO Jun 2017 - Nov 2019
microwave equipment manufacturer
This was a fully remote contract
Designed microcontroller boards; drew schematics and laid out PCBs
Wrote bare metal firmware in C; configured network modules for IoT products
Performed testing, tuning, and component level troubleshooting of active microwave filter circuits and digital circuits
Analyzed and plotted test data
Provided remote support of coworkers and customers with updating firmware, configuring and troubleshooting systems etc.
Wrote documentation

SimWave RF & Microwave Design, Londonderry, NH Feb 2015 - Jun 2017
microwave equipment manufacturer (now part of TelGaAs Inc.)
This was a partially remote position
Designed microcontroller boards; drew schematics and laid out PCBs
Specified and purchased electronic components, circuit boards and subassemblies
Wrote bare metal firmware in C; Configured network modules for IoT products
Implemented computer-controlled calibration and testing of products for increased speed and accuracy
Designed and programmed both GUI and command line software to control products and development boards and to acquire and analyze data from test instruments
Analyzed and plotted test data in Excel
Wrote scripts to automate and test GUIs and to automate remote testing of embedded devices
Performed testing, tuning, component level troubleshooting and repair of active microwave devices, and various digital and analog circuits
Built prototypes, test fixtures, cables etc.
Wrote documentation

Q-Filter Products Amesbury MA Nov. 2006 - Jan. 2015
Active RF filter manufacturer (a division of Bartley Machine Co.)
Designed Microchip PIC processor based embedded systems
Drew schematics and laid out PCBs
Specified and purchased electronic components, circuit boards and subassemblies
Wrote bare-metal firmware in C
Configured network modules for IoT products
Wrote desktop software to control products and instrumentation
Wrote Java applets to control IoT devices
Implemented computer-controlled calibration and testing of products for increased speed and accuracy
Performed testing, tuning, component level troubleshooting and repair of active microwave filter circuits and other rf devices, and various digital and analog circuits
Analyzed and plotted test data in Excel
Wrote documentation
Built prototypes, test fixtures, cables etc.

Micronetics Inc., Hudson NH 1999 - 2005
Manufacturer of mil-spec microwave signal processing devices (now part of Mercury Systems)
Designed, programmed, and implemented instrument control systems using PC's, embedded computers, and various GPIB and serial instrumentation
Performed testing, tuning, component level troubleshooting and repair of active microwave filter circuits and other rf devices, and various digital and analog circuits using network analyzers, spectrum analyzers, oscilloscopes, power meters and other instruments;
Wrote firmware (in C and assembler) used in microcontroller based products
Wrote software in Pascal and Visual Basic, ported software from HP Basic and other obsolete languages
Wrote Acceptance Test Procedures and other documentation
Built prototypes, test fixtures, cables etc.

Vectronics Microwave Corporation, Middlesex NJ 1985 - 1999
Manufacturer of mil-spec microwave signal processing devices (now part of Mercury Systems)
Designed, programmed, and implemented ATE systems using PC's, Hewlett Packard computers, and various HPIB and analog instruments;
Implemented computer-controlled calibration and testing of products for increased speed and accuracy
Tested and calibrated active microwave devices using network and spectrum analyzers, oscilloscopes, and other instruments;
Designed, prototyped, tested and performed component level repair of various digital and analog circuits such as interfaces (IEEE-488, RS-232-C, etc.), amplifiers, and voltage controlled oscillators;
Designed and wrote software for Basic Stamp based devices
Wrote engineering software in various languages
Created CAD drawings
Built prototypes, test fixtures, cables etc.

EDUCATION

Trenton State College, Trenton NJ, majored in Physics
University of Scranton, Scranton PA, majored in Engineering Science