Andrew A. Que **E-mail**: Resume2014@DrQue.net **Cellphone**: (608) 313-4432

Objective

C/C++ programmer for embedded system with emphasis on hardware/software interface.

Summary

Software/firmware engineer with over 17 years of professional experience. Strong points include software architecture; API design; low-level hardware/software interface on embedded systems; real-time control software at speeds in the tens of microseconds; data acquisition and filtering; PC-based simulation and test fixtures; fixed-point arithmetic; understanding of circuit design, schematics, and prototype bread boarding; implementation of serial communication interfaces; and assembly to C start-up code.

Experience

Red Fusion Studios

Princeton, WI (no longer in operation).
Senior Firmware Engineer (contract position).
July 2013 through January 2014.

- Took over as firmware team lead for line of wireless headphones and speakers.
- Served as an expert resource for junior level programmers.
- ARM 9 based product with 802.11b wireless Ethernet, and hardware MP3 decoder.
- Designed new setup and control interface using XML over HTTP.
- Implemented custom RTSP stream receiver used for synchronized audio playback.
- Implemented simple NTP for clock synchronization producing sub millisecond accuracy.
- Designed a library set that allowed development to be done both an a PC and on the target.
- Worked around bugs in the operating system, wireless driver, and IP stack that greatly complicated development.
- Retooled an unreadable make file system for building the project.

Neschen America/Seal Graphics

Sun Prairie, WI
Contract Software Engineer.
August 2012 to December 2012 full-time, December 2012 to June 2012 support.

- Assist with getting late product to market as quickly as possible.
- Wrote majority of software for Microsoft .NET machine control application running in Windows CE.
- PID heater control, analog signal filtering, and complete PC simulation of hardware platform.
- Worked with manufacturer of WinCE device to fix several bugs with their touch screen device.

Rockwell-Collins, Inc.

Cedar Rapids, IA.
Contract Software Engineer.
September 2008 to January 2009, August 2009 to August 2010, May 2011 to August 2011.

- Primarily involved with low-level development (calibration, hardware self-check, ext.)
- Developed PC-Based verification and debugging tool to monitor ARINC serial communication.
- Developed test software for complex synchronized dissimilar duel-processor flight control.
- Coding standards required to comply to DO-178B for mission-critical nature of applications.
- C/C++ language expert for management with a primarily Ada background.
- Preformed code reviews to ensure other developer's code was functional and met standards.
- Developed Python based framework for automated test scripts used for hardware verification.
- High integrity assembly/C boot code to allow diagnostics even with faulty hardware.
- Lauterbach JTAG debugger and software trace tool expert.
- Software for PIC32-based USB test adapter used for low-level hardware manipulation.

Sound Devices, LLC

Reedsburg, WI
Contract Software Engineer

February 2008 to May 2008.

- Short contract to help get a product done in time for a trade show. Product was ready on time.
- Assisted in development and debugging of professional 8-channel digital audio recorder.
- Implemented several new fetchers, and eliminated bugs.

DigiCon, Inc.

Craley, PA (no longer in operation)
November 2000 to March 2006; Support for installed equipment from June 2006 to present.
Contract Software Engineer

- Wrote all C and assembly software for DSP based controllers.
- Implemented PID and PWM control loops, and CANbus networking.
- Developed and implemented a web-based human-machine interface (HMI) using PHP and Javascript.
- Created PC-104 based simulator used in development, testing and troubleshooting.
- Made custom GNU/Linux image that booted in under 30 seconds.
- Implemented real-time bandpass filtering utilizing MIT developed Fourier transform libraries.
- Developed software that was ported from Windows XP Embedded to GNU/Linux with minimal change required.

Electro Cam, Corp.

Roscoe, IL
December 1996 to September 2001.
Software Engineer

- Coordinated software tests preformed on all builds of production software.
- Wrote software for a PC-based test used for production component testing.
- Designed hardware and Pascal software for PC-based test fixture with a variety of functions.
- Developed production test software used in assembly verification and troubleshooting.
- Provided technical support for advanced customer issues.
- "Communications Expert" for issue related to serial communication.

Education

Fall 2006 to present. Associate of Arts and Science from UW Rock County in 2009. Education ongoing with emphasis on computer engineering and mathematics.

Computer Abilities

Languages

C/C++, C# .NET, Visual Basic, Pascal, x86/ARM/PowerPC assembly, ladder logic, PHP, Perl, Java, Python, SQL, Javascript (including AJAX), XML, XHTML/HTML, CSS.

Processor familiarity

AMS3530 (ARM 9), TI OMAP (ARM 7), IBM PowerPC, PIC32, NEC V25, TI TMS320C24x, Motorola ColdFire, Intel i386, Analog Devices Blackfin

Notable software experience

Configuring and compiling LAMP (Linux, Apache, MySQL, PHP) systems, GCC (GNU compiler), GNU make system, Ubuntu server, Samba, SSH, Subversion, Eclipse, Lauterbach tools, Tk and MFC GUI applications.

Have run my own website (www.DrQue.net) on my own server since 2001. Site runs my own PHP/MySQL news feed and photo gallery.

Maintain several small open-source projects including a PHP class for polynomial regression, C++ matrix math template class, and several Javascript games.

References available on request.