

FRANK ZHAO

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Electrical & Computer Engineering
University of Waterloo

- Able to complete complex and innovative projects involving electrical, mechanical, and software aspects.
- Skilled in circuit design and PCB layout. Familiar with CAD tools such as Cadsoft EAGLE, Altium Designer, PADS.
- Competent with project enclosure prototyping using 3D printing and laser cutting techniques. Familiar with tools such as AutoCAD, SolidWorks, and tools from Adobe Creative Suite.
- Can prototype circuitry using components as small as 0402, QFN, and other leadless packages by hand.
- Experienced with many 8-bit and 32-bit microcontrollers, especially AVR and ARM Cortex families.
- Competent with a variety of programming languages and technologies: C, C++, C#, Java, Javascript, PHP, and others.
- Never hesitates to explore new technologies and learn new skills. Always exhibits enthusiasm and initiative.

- *Please visit my website <http://www.frank-zhao.com/> to see my projects, including demonstration videos, source code, and hardware design files.*

Work Experience:

Contractor/Consultant – Current

- Provides private engineering design, prototyping, and consulting services
 - Economical Expeditious Excellent Electrical Engineering Exceeding Expectations
 - Able to take an idea to manufacturing
 - Please contact for a list of clients and professional references

Spartan Bioscience – 2012 (Fall)

- Developed firmware for the Spartan FRX, running embedded Linux.
- Wrote C code, used multiple UNIX scripting languages, developed and performed verification protocols.
- Developed a production testing, calibration, and verification tool using a BOA server running on the embedded Linux OS. HTML and Javascript were utilized.
- Assisted the biology team by providing tools used to analyze scientific and statistical data.
- Maintained the company website and handled some internal IT work.

Harris Broadcast Communications – 2011 (Winter and Fall)

- Validated prototype hardware and evaluated components.
- Designed automated test system to check the signal integrity of thousands of signals.
- Wrote automated schematic validation code to check massive schematic files against customized design rules.
- Developed VHDL code to validate 3rd party IP functionality.
- Wrote many GUI utilities for internal use by other engineers.
- Trained a newly hired embedded software developer.

CatMedis Healthcare – 2010 (Summer)

- Developed (from scratch and by myself) a web-based application utilized by the technical staff in hospitals.
- The application ran on an IIS server on Windows Server 2005, utilizing MS SQL Server 2003, and written using C#, ASP.NET, and Entity Framework.

OASYS Healthcare – 2009 (Fall)

- Developed a system to manage and control multiple medical video devices from a touch panel computer.
- The software was developed in C# with a focus on making the interface friendly with touch panel computers in a hospital environment.
- Collaborated with post-secondary education institutions to develop automated testing tool

Education:

Bachelor of Applied Science, Honours Electrical Engineering, Co-op, University of Waterloo

Graduated April 2013

Notable Courses:

- Algorithms and Data Structures
 - Materials and Properties
 - Digital Circuit and Systems
 - Embedded Software
 - Microprocessors and Interfacing
 - Analog and Digital Communications
 - Electromagnetism
 - Thermodynamics and Heat Transfer
 - Analog Integrated Circuits
 - Computer Networks and Security
 - Wireless Systems
 - Control Systems
- Fourth-Year-Design-Project: universal remote control system involving augmented reality.

Awards and Other Activities:

- 5 time grand prize winner on Instructables.com contests, lost count on smaller prizes.
- Placed 1st in the summer 2012 Senior Design Competition at the Waterloo Engineering Competition, also placed 2nd twice in the Junior Design Competition in 2009 and 2010.
- Judges Award for building the best designed mini-sumo robot for the UW Robotics Team Mini Sumo Competition, University of Waterloo, 2008
- Orientation Leader for University of Waterloo Orientation Week 2010
- Electrical Lead of the University of Waterloo Mars Rover Team in 2011