

# LOGAN WILLIAMS

70 Amherst Street, Cambridge, MA 02142  
T (857) 756-8623 E loganw@mit.edu

## PROFILE

---

I am an undergraduate at the Massachusetts Institute of Technology, with experience in electrical/electronics engineering and computer science. I have gained this experience through many activities: working for the National Oceanic and Atmospheric Administration to develop embedded hardware and software for autonomous hydrophones, founding and leading Newport High School's F.I.R.S.T. Robotics Team and working with a bioengineering research team at Oregon State University.

## EMPLOYMENT

---

### **International Development Work, Centre for Rural Development Rickshaw Bank, Guwahati, Assam, India – Jan. 2010**

Worked with the Centre for Rural Development, an NGO in Northeast India and their rickshaw microfinance organization Rickshaw Bank. As part of a team, we redesigned the rickshaw frame and drivetrain, in addition to adding suspension, with minimal cost and maximum utility.

### **Research Assistant, Massachusetts Institute of Technology (MIT) Media Lab, Tangible Media Group, Cambridge, Massachusetts – Oct. 2009 to Dec. 2009**

Developed a browsing interface based on Nasa World Wind, for use with a three-dimensional tactile input/output table.

### **Electrical Engineering Research Assistant, National Oceanic and Atmospheric Administration, Newport, Oregon – Sept. 2008 to Aug. 2009**

Designed embedded hardware for use in NOAA's autonomous underwater hydrophone arrays. Wrote software for embedded microcontrollers, including MSP430s and 8051s. Implemented a time synchronization protocol using MSP430s and inductive modems. Using the 8051 microcontroller, I implemented a data transfer protocol with Iridium satellite modems, and an RS232 protocol for communicating with an onboard digital signal processor. Additionally, I helped design, assemble, and test analog preamplifiers for recording audio data.

### **Bioengineering Research Assistant, Oregon State University, Corvallis, Oregon – Summer 2008**

Worked with a research team of undergraduates and a professor at Oregon State University as part of a bioengineering research project, the creation of a sensor for measuring cell membrane permeability, with applications in cryopreservation and toxin detection. The project involved a fusion of bioengineering and electrical engineering skills, and I assisted in engineering the electrical output of the device and data logging/data processing applications in LabVIEW. Additionally, I learned skills ranging from programming in MATLAB to biological cell culturing.

### **Technology/How-To Writer, Mahalo Inc./Hack-A-Day – Apr. 2008 to Sept. 2008**

Wrote DIY electronics and photography related how to articles for the popular Hack-A-Day weblog, by Mahalo, Inc.

### **Design Updater, Designer, Eclectric Solutions, Newport, Oregon – Summer 2006, 2007**

Created electrical, fluid, and process flow schematics in AutoCAD from given specifications, updated existing schematics with new information, retooled AutoCAD drawings for usability. Designed a professional web presence for Eclectric Solutions, using standards-compliant XHTML and CSS with a PHP backend.

## SKILLS

---

- Windows 2000/XP, Mac OS X, Linux (and other UNIX-like operating systems)
- Microsoft Office, iWork, Open Office
- Technical writing and professional communication
- Web development with (X)HTML, CSS, PHP, and MySQL
- Computer programming with C, Processing, Python, Java
- Embedded microcontroller programming, including Arduino, PIC assembly and C with Atmel AVR's.
- Electronic circuit design, including
  - digital circuit design with CMOS logic and microcontrollers, including AVR's, PIC's, and MSP430's
  - analog circuit design, including preamplifiers, Nyquist filters, and audio filters
- PCB design, prototyping, SMD and through-hole soldering
- AutoCAD, LabVIEW, MATLAB

## EDUCATION

---

Expected B.S. in Electrical engineering, June 2013. Massachusetts Institute of Technology (MIT), Cambridge, Massachusetts.  
Newport High School, Newport, Oregon. Graduated June 2009. Honor Roll, GPA 4.0

**References available upon request.**