WILL LANGFORD

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EDUCATION

Massachusetts Institute of Technology, Cambridge MA   ongoing since Aug 2012
Master of Science – Media Lab, Center for Bits and Atoms, expected May 2014

Tufts University, Medford MA   Aug 2008–May 2012
Bachelor of Science in Mechanical Engineering, May 2012 (GPA 3.81)
Minor in Engineering Management

> Honors and Awards: Vincent Manno Leadership Award, The Prize Scholarship of the Class of 1882, O'Leary Design Award, Mead Jonathan Taylor Prize, Summa Cum Laude, Tau Beta Pi, Dean's List (all semesters)

WORK EXPERIENCE

Cardibo.com, Medford MA   ongoing since Oct 2011
Hardware Developer

> Designed a suite of wireless sensor nodes for use in gym equipment monitoring services.

Teaching Assistant, Tufts University - Medford MA   ongoing since Jan 2011, Sep–Dec 2011
ES-95: Electronic Musical Instrument Design

> Assisted students in the fabrication and electrical design of electronic musical instruments.

ME-84: Intro to Robotics and Mechatronics

> Assisted students in electronics, fabrication, and programming of telepresence robots for use in educational environments.

Center for Engineering Education and Outreach, Tufts University - Medford MA
R&D Associate   July–Aug 2011, Jan–May 2010

> Designed a circuit board that allows Lego NXT motors and sensors connected and controlled from an Arduino microcontroller.

> Developed a method of programming Arduino microcontrollers using Labview. Assisted in testing software, sourcing parts for a kid-friendly robotics kit, and web development.

Makerbot Industries, Brooklyn NY   May–July 2011, May–Aug 2010, May–Aug 2009
Summer R&D Associate

> Researched and prototyped "Dual-Extrusion" technologies for Makerbot 3D printers.

> Designed, tested, programmed, and launched the "Unicorn" pen plotter tool-head.

> Supported development, production, and distribution of first generation desktop 3D printers.

MIT Non-Newtonian Fluids Lab, Cambridge MA   Jan—May 2011
Research Associate

> Implemented control circuitry for a linear vertical stage to be used in viscosity experiments.

ROBOTICS/ENGINEERING LEADERSHIP

- Founder and director of the Tufts Botlab: a student run robotics lab, 2010–2012
- Founder and president of Tufts Robotics Club, 2008–2012
  - Placed 1st on the Trinity Firefighting Robotics Olympiad Exam twice, April 2012 and 2011.
  - Granted Student Life Imagination Award for developing and conducting student robotics workshops including "CNC Cupcake Frosting," "Sumobot Competition," "Friendly Robotics," and "Toy-hacking with Elmo," 2009–2012
  - Mentored Medford High School and Melrose High School robotics teams, 2010–2012

- o Created Bloombot, an autonomous hydroponic gardening system, May 2009–Nov 2009
- o Designed and built a 12lb Battlebot for a Robot Conflict competition, 2009–2011
- Team leader for construction of Mars rover robot, ASME student design competition, April 2009

SKILLS

- Fabrication: CNC routing (shopbot 3-axis and 5-axis), CNC milling (5-axis Hurco), waterjet machining, excimer laser micromachining, laser cutting, 3D printing (FDM, SLA), Manual Lathe and Mill
- Imaging/Characterization: x-ray CT, confocal microscopy (incl. topography), SEM, 3D laser scanning, materials strength testing (Instron)
- CAD Software: SolidWorks (including FEA), Autodesk Inventor, Rhino, AutoCAD, custom design software
- Embedded Systems: Atmel AVR, TI Value-Line, and PIC Midrange Microcontrollers; Arduino; CadSoft Eagle PCB Design; 2.4Ghz RF wireless
- Simulation/Controls Software: Matlab (incl. Simulink), Labview, VBA
- Programming Languages: C++, C, Python, Java
- Travel: dual US/UK citizenship, lived in London for six years, lived in Singapore for two years

RELEVANT COURSEWORK

- Controls: Networked Estimation and Control, Optimization, Advanced Control Design
- Mechanical: Precision Machine Design, Robotics and Mechatronics, Materials
- Management: Engineering Leadership, Management of Innovation, Technical Writing