

Joshua P. Wilson
Graduate Research Assistant
Brigham Young University

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Education **Brigham Young University**, Provo, Utah USA

M.S. in Mechanical Engineering, Sept. 2014 - Present

- Research Topic: Adaptive & Dynamic Control of Soft, Inflatable Robots
- Advisor: Dr. Marc D. Killpack - Assistant Professor (Department of Mechanical Engineering)
- Areas of Expertise - Soft Robotics, Controls, Mechanics and Dynamics, Mechatronic Systems
- GPA - Pending

Brigham Young University, Provo, Utah USA

B.S. in Mechanical Engineering, April 2014

- Coursework in Mechatronics, Computer Science & Numerical Methods (C++), Product Design
- Capstone Project designing & prototyping a digital/wireless Stethoscope/ECG.
- GPA - 3.72

Research Experience **Brigham Young University**, Provo, Utah USA

Graduate Research Assistant

September 2014 - Present

Research under NASA Early Career Faculty Grant developing novel methods for adaptive control of soft, inflatable robots.

Undergraduate Research Assistant

July 2012 - April 2013

Performed research and development of a system to enable multi-user editing of CAD data.

- Developed & implemented multi-user architecture for Autodesk Inventor.
- Testing & development of various novel CAD tools in Autodesk Inventor, Siemens NX, & CATIA.

Undergraduate Research Assistant

September 2011 - December 2013

Research performed in BYU Turbomachinery Research Lab

- Instrumentation & Testing of a rig for testing and analyzing pulsed flow through a turbine engine to simulate flow in a pulsed-detonation engine.
- Perform rudimentary CFD and data analysis of flow in turbine engines.

**Research
Interests in
Robotics**

- adaptive control
- soft robots
- mechatronic system design
- virtual reality
- haptic feedback
- robotic & computer vision
- robot dynamics and mechanics
- mechanical robot design and optimization

**Professional
Experience**

Roth & Rau - Ortner, Sandy, Utah USA
Mechanical Engineer

April - December 2014

- Assisted with engineering for automated systems in cleanroom environments.
- Assisted in testing & developing specifications for a nitrogen purge system for silicon wafer carriers.

LSF Design Engineering, Provo, Utah USA
Mechanical Engineering Intern

January 2013 - June 2013

- Performed structural optimization to reduce weight & material in various systems for companies such as ATK Launch Systems.

**Honors and
Awards**

- Full funding for Masters degree program at Brigham Young University
- National Merit Scholarship Recipient, Brigham Young University (four year full-tuition)
- Tau Beta Pi, (national engineering honor society)
- Fluency in German (Reading, Writing, & Speaking)
- New Century Scholarship Recipient, Associates Degree received during High School
- Valedictorian, NUAMES High School
- Eagle Scout award from Boy Scouts of America

**Community
Service**

- Volunteered at local Elementary School teaching students robotics and helping them build robotic systems.
- Lived in Germany for two years as a church service missionary (2009-2011)

Technical Skills

Prototyping and Hardware

- *Experienced:* 3D printer (with ABS plastic), 2D laser cutter, drill press, bandsaw, mitre saw, manual circular saw, tablesaw, router, belt and disk sander
- *Familiar:* mill, lathe

Programming/Mathematical Languages and Libraries

- *Experienced:* C/C++, Python, Matlab, \LaTeX
- *Familiar:* ROS, Simulink, C#, Objective-C, MathCAD

Commercial Software and Operating Systems

- *CAD and Finite Element Analysis:* NX, Autodesk Inventor, Solidworks, common Windows spreadsheet and presentation software
- *Operating Systems:* Unix/Linux (Ubuntu), Windows, Mac OS X