# Benjamin Shih

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## Education

University of California, San Diego — San Diego, CA
Ph.D. Mechanical and Aerospace Engineering — August 2015 - present

Carnegie Mellon University — Pittsburgh, PA
M.S. Electrical and Computer Engineering — August 2013 - December 2013
B.S. Electrical and Computer Engineering — August 2009 - May 2013

## Skills

**Software:** MATLAB, Eagle, SolidWorks, LaTeX, Git, Cadence, ProTools
**Electronics:** PCB design, microcontrollers, circuit simulation, oscilloscope, function generator, multimeter
**Coding:** C++, Python, Java, C, HTML
**Languages:** English (proficient), Mandarin Chinese (speaking), Spanish (basic)

## Experiences

**Bioinspired Robotics and Design Lab, UC San Diego** — San Diego, California
*Graduate Research Assistant* — September 2015 - present

- Soft robotics and sensing, pneumatic actuation, computer vision, human-robot interaction, virtual reality.
- Advised by: Prof. Michael Tolley

**OpenWorm**
*Community Manager* — October 2015 - present

- Volunteer coordinator for open source neuroscience project creating virtual simulation of C. elegans.
- Organized online series of OpenWorm Journal Clubs. Five archived YouTube videos with ∼1300 views.
- Advised by: Dr. Stephen Larson

**Momentum Machines** — San Francisco, California
*Embedded Software Engineering Intern* — May 2015 - August 2015

- Food technology startup using robotics and automation to produce gourmet food.
- Lead engineer for PCB fabrication of 6 unique boards with a design firm.
- Statecharts (finite state machine) software architecture for embedded control. Used a web-based graphical user interface to facilitate rapid prototyping and fast system bringup.
- Advised by: Jeff Jensen, Ali Rathore.

**Reconfigurable Robotics Lab, EPFL** — Lausanne, Switzerland
*Research Assistant, École Polytechnique Fédérale de Lausanne* — May 2014 - April 2015

- Built untethered, locomotive robot using soft pneumatic actuators (SPAs).
- Experimented with actuator frames to improve actuation consistency.
- Advised by: Prof. Jamie Paik, Dr. Juan Manuel Florez.

## Honors

UC San Diego Irwin Jacobs School of Engineering Fellowship (154k USD) — February 2015
Winner, Intel Internet of Things Hackathon, Berlin (1.5k EUR) — April 2015
Finalist (top 25 out of 101 projects), HackZurich Hackathon — October 2014
Scholarship of Excellence in Research at EPFL (20k CHF) — February 2014

## Publications

A. Minori, **B. Shih**, C. Christianson, M. T. Tolley. "3D Printed Shape Memory Polymer Composite for Fabric Actuation". Robot Makers Workshop at Robotics: Science and Systems (RSS), Michigan, USA. June 2016.

P. Tandon, S. Lam, **B. Shih**, T. Mehta, A. Mitev, Z. Ong. "Quantum Robotics: Primer on Current Science and Future Perspectives". Working paper, ResearchGate. May 2016.

J. M. Florez, **B. Shih**, Y. Bai, J. Paik. "Soft Pneumatic Actuators for Legged Locomotion". IEEE International Conference on Robotics and Biomimetics (ROBIO 2014), Bali, Indonesia. December 2014. Acceptance rate: 58.6% (374 of 638).