# Brad Saund PhD

## Education

**2017–2021**
**(graduation: August)**  **PhD Robotics**, *University of Michigan*.
ARM lab
Path planning for manipulation

**2015–2017**  **Master's of Robotics**, *Carnegie Mellon*.
Biorobotics lab
Path planning and precision localization in confined spaces

**2008–2012**  **BS Mechanical Engineering**, *Caltech*.

## Work Experience

**2014–2015**  **Software Development Engineer**, *Amazon*, Seattle.
I created software for the Amazon Kindle E-Readers and Tablets.

**2012–2014**  **Robotics Engineer**, *Electroimpact*, Seattle.
I designed, built, and programmed robots that build airplanes

**2010–2012**  **Research Fellow**, *Caltech*, Pasadena.
Fluid Dynamics Research

## Skills

**Programming**  Git, ROS, Tensorflow, OpenCV, C++, Python, Java, Matlab

**Deployment**  Deployment to production environments of both software and hardware to millions of machines (Kindle) and machines worth millions of dollars (aerospace robots)

**Robotics**  Path Planning with Uncertainty, Sensor Fusion, Localization, Autonomous Vision and Navigation

## Selected Publications (see www.bradsaund.com for a complete list)

**2021**  **Brad Saund** and Dmitry Berenson "CLASP: Constrained Latent Shape Projection for Refining Object Shape from Robot Contact", CoRL

**2020**  **Brad Saund** and Dmitry Berenson "Diverse Plausible Shape Completions from Ambiguous Depth Images", CoRL

**Brad Saund** and Dmitry Berenson "Fast Planning Over Roadmaps via Selective Densification" 2020, RA-L (with ICRA presentation)

**2019**  **Brad Saund**, Sanjiban Choudhury, Siddhartha Srinivasa and Dmitry Berenson "The Blindfolded Robot: A Bayesian Approach to Planning with Contact Feedback", ISRR

**2017**  **Brad Saund** "Planning and Localizing under Contact Uncertainty", Carnegie Mellon Master's Thesis

**2016**  **Brad Saund**, Shiyuan Chen, and Reid Simmons. "Touch based localization of parts for high precision manufacturing", 2016 ICRA

**2013**  **Brad Saund** and Russell DeVlieg. "High Accuracy Articulated Robots with CNC Control Systems", 2013 SAE-Aerotech

## Service

**2013–current**  **Volunteer Mentor**, *FIRST Robotics*.

**2011–2012**  **House President**, *Caltech Student Government*.

## References

**U. Michigan**
○ Dmitry Berenson

**Carnegie Mellon**
○ Reid Simmons
○ Howie Choset

**Electroimpact**
○ Russ DeVlieg

**Caltech**
○ Matthew Heverly