Benjamin Reinhardt

Innovation, Intensity, and Tenacity. Products that give people superpowers.
http://benjaminreinhardt.com | reinhardt@alumni.caltech.edu | 513.703.3332

EDUCATION

CORNELL UNIVERSITY
PhD Space Robotics
May 2015
NASA Research Fellow
Lester B. Knight Fellow

CALTECH
BS Mechanical Engineering
History
June 2010

LINKS

Writing:// benjaminreinhardt
Github:// bzreinhardt
LinkedIn:// benjaminzreinhardt
YouTube:// SeigeEngineer
Twitter:// @ben_reinhardt
Quora:// Benjamin-Reinhardt

UNPAID XP

- SLAM, PF, and RRT Roomba Control
- Amphibious Robots
- Two Story Trojan Horse
- Choreographed lightsaber battles
- Resurrected elevator-wrangling
- Kinect-based robot grasp detector
- Too Many Trebuchets

Ditch Day Puzzle Hunt:

- Auto-collapsing concrete wall
- Reverse geocache box
- 12-ft ice climbing wall
- Electric clue-Palantir
- Light-connection maze

PAID XP

MAGIC LEAP | Systems Engineer
Spring 2015 - Present | Mountain View, CA

- Product Lead on an unannounced piece of the product that enables contextual computing.
- Market research and strategy
- Head tracking algorithms

NASA AMES | Guest Scientist, Intelligent Robotics Group
Summer 2014 | Mountain View, CA

- Designed, fabricated, and tested a robot to demonstrate induction couplers in a space-like environment.

Summer 2013 | Mountain View, CA

- Built a controller that turned a room-sized gantry into a zero-g dynamics emulator.
- Created a learning algorithm to run automated tests and iteratively adjust the system model and tuned gains

NASA JPL | Technology Research Fellow, Robotics Group
Summer 2012 | Pasadena, CA

- Created new control algorithms for induction-coupled spacecraft.
- Experimentally characterized eddy-current forces for actuation.

AEROVIRONMENT INC. | Research Initiative Intern
Summer 2009 | Monrovia, CA

- Built a photovoltaic rig for powering aquatic robots and tested in the open ocean.
- Designed roof-based turbine system.

VIRTUAL LUNG PROJECT | Research Assistant
Summer 2008 | UNC Chapel Hill

- Developed simulations of cilia-driven fluid flow in the lungs to suggest possible cystic fibrosis drugs.

RESEARCH

CORNELL SPACE SYSTEMS DESIGN STUDIO | Graduate Student + Lab Manager
Summer 2010 – Spring 2015 | Ithaca, NY
Induction-based Locomotion for Orbital Robotics

- Invented Induction Coupler actuation for space robotics.
- Built a procedural algorithm that generated coupled physical designs and control systems.
- Developed simulation framework and visualizer for electromagnetic spacecraft actuators.
- Mentored masters and senior projects.
- Rebuilt lab website for modernity and mobile friendliness.

PUBLICATIONS

Please see http://benjaminreinhardt.com/research/