

Jacob Varley

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Education

Columbia University

Ph.D. Computer Science

Advisor: Professor Peter Allen

New York City, NY

2013–present

Massachusetts Institute of Technology

B.S. in Computer Science (6-3)

Cambridge, MA

2009–2013

Awards

AAAI-16 Robotics Fellow

Award to robotics students to foster dialogue between Robotics and AI researchers. Spring 2016

Phoenix, USA

NSF EAPSI Fellow

Collaborated with the HUBO lab at KAIST.

Daejeon, South Korea

2014

Research and Industry Experience

Columbia University Robotics Group

Graduate Research Assistant for Professor Peter Allen

Explored the intersection of machine learning and robotics with a focus on experience based grasp planning.

New York City, NY

2013–present

Clarifai

Machine Learning Research Intern

Implemented novel Deep Learning algorithms for confidential projects.

New York City, NY

Summer 2015

HUBO Lab - KAIST

NSF EAPSI Fellow

Developed new experience based planning algorithms for generating multi-fingered robotic grasps.

Shared expertise related to ROS and Gazebo simulator with the HUBO lab.

Daejeon S.K.

Summer 2014

Level Solar

Contract IOS Development

Developed IOS application for use by door to door sales team.

Cambridge, MA

Summer 2013

AVG (OpenInstall)

Software Engineering Intern

Researched best practices for and deployed a Continuous Integration Framework for Engineering Team.

San Francisco, CA

January 2013

MIT EECS Undergraduate Research and Innovation Scholar

Undergraduate Research Assistant for Professor Catherine Havasi

Developed build system for ConceptNet5

Cambridge, MA

Fall 2012/Spring 2013

Qualcomm Labs

Software Engineering Intern

Contributed to Gimbal Project (<http://www.gimbal.com/>)

Interned during product release

Time was split evenly between Android and IOS SDK's and shared server backend.

San Diego, CA

Summer 2012

MIT Undergraduate Research Assistant

Undergraduate Research Assistant for Professor Josh Tenenbaum

Cambridge, MA

Fall 2011

Developed software in the Computational Cognitive Science Group to model fluids and gain a more quantified understanding of how people perceived and predict the motion of fluids.

TripAdvisor

Software Engineering Intern

Developed machine learning based validation tool to verify outgoing links.

Newton, MA

Summer 2011

CVision Technologies

Software Engineering Intern

Expanded company's website to include 20+ other languages in order to increase international business.

Provided analysis of competitors marketing and online presence strategies

New York City, NY

Summer 2010

Publications

- [1] Jacob Varley, Chad DeChant, Adam Richardson, Avinash Nair, Joaquín Ruales, and Peter Allen. "Shape Completion Enabled Robotic Grasping". In: *Intelligent Robots and Systems (IROS), 2017 IEEE/RSJ International Conference on*. 2017.
- [2] Jacob Varley and Peter Allen. "Reasoning about 3D geometry with Touch and Vision (Talk)". In: *New England Manipulation Symposium* (2017).
- [3] Jacob Varley, David Watkins, and Peter Allen. "Visual-Tactile Geometric Reasoning (Abstract and Poster)". In: *Data-Driven Manipulation workshop, Robotics: Science and Systems* (2017).
- [4] Jacob Varley, Caroline Weinberg, Srihari Sridhar, Jonathan Weisz, Ethan Rand, Kenneth Lyons, Sanjay Joshi, Joel Stein, and Peter Allen. "Human Robot Interface for Assistive Pick and Place (Abstract and Poster)". In: *HUMORARR workshop, RO-MAN* (2016).
- [5] Jacob Varley, Srihari Sridhar, Jonathan Weisz, Ethan Rand, Kenneth Lyons, Sanjay Joshi, Joel Stein, and Peter Allen. "Human Robot Interface for Assistive Grasping". In: *Socially & Physically Assistive Robotics For Humanity workshop, Robotics: Science and Systems* (2016).
- [6] Jacob Varley, Jonathan Weisz, Jared Weiss, and Peter Allen. "Generating Multi-Fingered Robotic Grasps via Deep Learning". In: *Intelligent Robots and Systems (IROS), 2015 IEEE/RSJ International Conference on*. 2015.
- [7] Jacob Varley, Jonathan Weisz, Jared Weiss, and Peter Allen. "Multi-Fingered Robotic Grasps via Deep Learning (Talk)". In: *New England Manipulation Symposium* (2015).

Teaching Experience

Humanoid Robots: (COMSW6731) Teaching Assistant

Spring 2016

Humanoid Robots: (COMSW6998-03) Teaching Assistant

Spring 2015

Computational Aspects of Robotics: (COMSW4733) Teaching Assistant

Fall 2014

Invited Talks

Introduced Big Hero 6 on flight deck of the USS Intrepid.

Movie Night at the Intrepid Museum

New York City, NY

Summer 2016

Shape Completion Enabled Robotic Grasping

Rutgers University Robotics Seminar

New Brunswick, NJ

December 2016

Professional Activities

Paper Reviews.....
International Conference on Intelligent Robots and Systems (IROS) 2017
International Workshop on Advanced Robotics and its Social Impacts (ARSO) 2017
International Conference on Intelligent Robots and Systems (IROS) 2016
International Conference on Robotics and Automation (ICRA) 2015
Workshop Organization.....
New England Manipulation Symposium (NEMS) 2014

Interests

Phi Delta Theta Fraternity: President, Rush Chair, Community Service Chair, Social Chair
Gymnastics: Competed for 10 years including multiple collegiate competitions
MIT Battlecode: Competed with 2 partners against 100+ teams both Jan. 2012 and Jan. 2011