

# Andy Zeng

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## Education

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|---|----------------|
| <b>Princeton University</b> , Princeton NJ<br>PhD, Department of Computer Science<br>Advisor: Thomas Funkhouser         | 2015 - present |
| <b>Princeton University</b> , Princeton NJ<br>MA, Computer Science  | 2015 - 2017    |
| <b>University of California, Berkeley</b> , Berkeley CA<br>BA, Double Major in Computer Science and Applied Mathematics | 2011 - 2015    |

## Research and Industry Experience

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| <b>Google Brain Robotics</b> , Visiting Researcher                   | 2017 - present |
| <b>Princeton Vision and Robotics Group</b> , with Thomas Funkhouser  | 2015 - present |
| <b>MIT Manipulation and Mechanisms Lab</b> , with Alberto Rodriguez  | 2016 - 2017    |
| <b>Stanford Computer Graphics Lab</b> , with Matthias Nießner        | 2015           |
| <b>CMU Computer Vision Group</b> , Robotics Institute Summer Scholar | 2014           |
| <b>Berkeley Tele-immersion Lab</b> , with Ruzena Bajcsy              | 2013 - 2015    |
| <b>Bay Area Intellectual Property Group</b> , Research Assistant     | 2013           |
| <b>Lenovo, Inc.</b> , Software Engineering Intern                    | 2009 - 2010    |

## Honors and Awards

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| <b>Princeton School of Engineering and Applied Science Award for Excellence</b><br><i>"Given to SEAS advanced graduate students who have performed at the highest level as scholars and researchers"</i> | 2018 |
| <b>IROS KROS Best Cognitive Robotics Paper Award Finalist</b><br><i>Learning Synergies between Pushing and Grasping with Self-supervised Deep Reinforcement Learning</i>                                 | 2018 |
| <b>Amazon Robotics Best Systems Paper Award in Manipulation</b><br><i>Robotic Pick-and-Place of Novel Objects in Clutter with Multi-Affordance Grasping and Cross-Domain Image Matching</i>              | 2018 |

<b>NVIDIA Graduate Fellowship</b>	2018 - 2019
<b>1st Place Winners (Stow Task) of the Worldwide Amazon Robotics Challenge</b> <i>An internationally recognized premier competition for robotics and automation</i>	2017
<b>3rd Place Winners of the Worldwide Amazon Picking Challenge</b>	2016
<b>Gordon Y.S. Wu Fellowship in Engineering and Wu Prize</b> <i>"A highly selective and prestigious award" from Princeton University</i>	2015 - 2016
<b>1st Place State (CA) Champion for FBLA Computer Programming</b>	2011

## Invited Talks and Guest Lectures

Efficient Self-supervision in Deep Robotic Learning

*RE·WORK Deep Learning for Robotics Summit 2018, June 2018*

Self-supervised Deep Learning for Model-free Grasping and Object Pose Estimation

*NCTU Robotics Seminar: Robotic Manipulation - Perception Planning and Design, Nov. 2017*

Robotic Pick-and-Place of Novel Objects

*Google X and Google Brain in Mountain View, Nov. 2017*

Deep Learning for Robotic Manipulation

*Deep Learning for Graphics and Vision Seminar at Princeton University, Apr. 2017*

Self-supervised Deep Learning

*Deep Learning for Graphics and Vision Seminar at Princeton University, Mar. 2017*

Self-supervised Learning Local Geometric Descriptors from 3D Reconstructions

*Pixl at Princeton University, Nov. 2016*

Lessons Learned from the Amazon Picking Challenge

*CS Seminar at Princeton University, July 2016*

Primitive-Level 3D Deep Learning

*CVPR Tutorial: 3D Deep Learning, June 2016*

## Publications

**Andy Zeng**, Shuran Song, Stefan Welker, Johnny Lee, Alberto Rodriguez, Thomas Funkhouser. Learning Synergies between Pushing and Grasping with Self-supervised Deep Reinforcement Learning. *IEEE International Conference on Intelligent Robots and Systems (IROS)*. [IROS KROS Best Cognitive Robotics Paper Award Finalist](#). 2018.

Shuran Song, **Andy Zeng**, Angel Chang, Manolis Savva, Silvio Savarese, Thomas Funkhouser. Im2Pano3D: Extrapolating 360 Structure and Semantics Beyond the Field of View. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. [Oral Presentation](#). 2018.

**Andy Zeng**, Shuran Song, Kuan-Ting Yu, Elliott Donlon, Francois R. Hogan, Maria Bauza, Daolin Ma, Orion Taylor, Melody Liu, Eudald Romo, Nima Fazeli, Ferran Alet, Nikhil Chavan Dafle, Rachel Holladay, Isabella Morona, Prem Qu Nair, Druck Green, Ian Taylor, Weber Liu, Thomas Funkhouser, Alberto Rodriguez. Robotic Pick-and-Place of Novel Objects in Clutter with Multi-Affordance Grasping and Cross-Domain Image Matching. *IEEE International Conference on Robotics and Automation (ICRA)*. [Amazon Robotics Best Systems Paper Award in Manipulation](#). 2018.

**Andy Zeng**, Shuran Song, Matthias Nießner, Matthew Fisher, Jianxiong Xiao, Thomas Funkhouser. 3DMatch: Learning Local Geometric Descriptors from RGB-D Reconstructions. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. [Oral Presentation](#). 2017.

Shuran Song, Fisher Yu, **Andy Zeng**, Angel X. Chang, Manolis Savva, Thomas Funkhouser. Semantic Scene Completion from a Single Depth Image. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. [Oral Presentation](#). 2017.

Angel Chang, Angela Dai, Thomas Funkhouser, Maciej Halber, Matthias Nießner, Manolis Savva, Shuran Song, **Andy Zeng**, Yinda Zhang. Matterport3D: Learning from RGB-D Data in Indoor Environments. *IEEE International Conference on 3D Vision (3DV)*. 2017.

**Andy Zeng**, Kuan-Ting Yu, Shuran Song, Daniel Suo, Ed Walker Jr., Alberto Rodriguez, Jianxiong Xiao. Multi-view Self-supervised Deep Learning for 6D Pose Estimation in the Amazon Picking Challenge. *IEEE International Conference on Robotics and Automation (ICRA)*. 2017.

## Leadership

Team MIT-Princeton at the Amazon Robotics Challenge 2015 - 2017  
*Princeton Team Lead (Perception Technology Development)*  
*1st Place Winners (Stow Task) in 2017, 3rd Place Winners in 2016*

Upsilon Pi Epsilon (Computer Science Honor Society at Berkeley) 2013 - 2015  
*President*

The Berkeley Forum 2012 - 2014  
*IT Chair*

## Teaching Experience

### Teaching Assistant

Princeton COS 426 Computer Graphics Spring 2017  
Princeton COS 429 Computer Vision Fall 2016

### Lab Assistant

Berkeley CS61a Structure and Interpretation of Computer Programs Fall 2012

## Mentoring and Advising

### Princeton Undergraduate Research

Ed Walker  
Prem Qu Nair

## Professional Activities

### Paper Reviewing

IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2016, 2017, 2018  
IEEE International Conference on Robotics and Automation (ICRA), 2018  
Neural Information Processing Systems (NIPS), 2018  
IEEE International Conference on Intelligent Robots and Systems (IROS), 2018  
The International Journal of Robotics Research (IJRR), 2017  
Conference on Robot Learning (CoRL), 2018  
IEEE Robotics and Automation Letters (RA-L), 2018, 2019  
European Conference on Computer Vision (ECCV), 2016, 2018  
IEEE International Conference on Computer Vision (ICCV), 2017  
Neural Information Processing Systems (NIPS), 2015  
Special Interest Group on Computer GRAPHics and Interactive Techniques (SIGGRAPH), 2016  
Pattern Recognition (PR, Journal), 2017  
Eurographics (EG), 2018  
IEEE Transactions on Image Processing (TIP), 2017  
IEEE International Conference on Automation Science and Engineering (CASE), 2017  
IEEE IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), 2018

### Conference Tutorial/Workshop Organization

Tutorial: 3D Deep Learning, CVPR 2016

### Other Technical Activities

Berkeley ASUC Office of the President, iOS Mobile Application Developer 2014  
The Berkeley Forum, Webmaster and Site Production Lead 2012 - 2014

## Affiliations

IEEE Computer Society, Member	2015 - present
Association of Computing Machinery, Member	2015 - present
Berkeley Upsilon Pi Epsilon Computer Science Honor Society, President	2013 - 2015
Berkeley Computer Science Undergraduate Association, Member	2012 - 2015