

## Adam Allevato

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Socially Intelligent Machines Lab  
2501 Speedway, EER 7.826, Stop C0806  
Austin, TX 78712

## Education

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<b>The University of Texas at Austin</b> , Austin, TX	2016-Present
PhD candidate, Mechanical Engineering	
Advisors: Andrea Thomaz, Mitch Pryor	
<b>The University of Texas at Austin</b> , Austin, TX	2016
Masters of Science, Mechanical Engineering	
<i>Thesis: An Object Recognition and Pose Estimation Library for Intelligent Industrial Automation</i>	
Advisor: Mitch Pryor	
<b>Colorado State University</b> , Fort Collins, CO	2014
Bachelor of Science, Mechanical Engineering	

## Honors and Awards

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US DOE Nuclear Energy University Program (NEUP) Fellow	2015-2018
AP-Google Scholarship	2013-2014
Undergraduate Academic Excellence award, CSU School of Mechanical Engineering	2013
Tau Beta Pi Mechanical Engineering Honor Society	2013-Current
CSU College of Engineering Dean's List	2011-2014
Colorado State University Honors Program	2010-2014

## Research and Work Experience

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<b>Diligent Robotics: Engineering Intern</b>	Summer 2018
<ul style="list-style-type: none"><li>Set up and maintained continuous integration/deployment, unit tests across Agile company</li><li>Designed and implemented numerous ROS packages, e.g. data pipelines, motion planning</li><li>Software: Docker, CircleCI, C++, Python, ROS, MoveIt</li></ul>	
<b>Open Robotics (formerly OSRF): Software Engineering Intern</b>	Summer 2017
<ul style="list-style-type: none"><li>Improved and extended camera distortion models in Gazebo simulator.</li><li>Created the first fully-functional ROS2 pick-and-place demo, presented at ROSCon 2017.</li><li>Software: C++, Python, ROS2, Gazebo</li></ul>	
<b>The University of Texas at Austin</b>	
<b>Socially Intelligent Machines (SIM) Lab</b>	2017-Present
<ul style="list-style-type: none"><li>Developed techniques to modify and generate manipulation actions for robots in human environments.</li><li>Studied the discovery of robot manipulation actions (affordances) and human perceptions of affordances.</li></ul>	
<b>Nuclear and Applied Robotics Group (NRG)</b>	2014-2017
<ul style="list-style-type: none"><li>Explored new computer vision and manipulation strategies for robots in radioactive gloveboxes.</li><li>Led student team to design a robotic workcell for nuclear waste sorting and part manufacturing.</li></ul>	
<b>Amazon Picking Challenge</b>	2015
<ul style="list-style-type: none"><li>Implemented algorithms using Point Cloud Library, machine learning, and synthetic training data to classify and detect 15 types of household objects.</li></ul>	
<b>NLM Pill Image Recognition Challenge</b>	Spring 2016
<ul style="list-style-type: none"><li>Designed and trained Siamese network (using Caffe) to distinguish between 1000s of medication images.</li></ul>	

## Additional Work Experience

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Los Alamos National Laboratory: Graduate Research Associate	Summer 2015/2016
Measuring Usability: Application Developer	Summer 2014
Morgan Stanley: Summer Analyst	Summer 2013
Colorado State University: Grader, Machine Design Class	Spring 2013
United Launch Alliance: Intern	Summer 2012
CSU Cardiovascular and BioFluid Mechanics Lab: Research Assistant	Spring 2012
Rocky Mountain Student Media Corporation: Webmaster	February 2011-May 2014

## Journal Publications

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A. Allevato, E. S. Short, M. Pryor, A. Thomaz. "Learning Labeled Robot Affordance Models by using Simulations and Crowdsourcing". *International Journal of Robotics Research (IJRR)*. 2018. *Under review*.

## Conference Publications

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- A. Allevato, A. Thomaz, M. Pryor. "Affordance Discovery using Simulated Exploration". *International Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*. 2018.
- E. Paredes, C. Petlowany, M. Horn, A. Allevato, M. Pryor. "Automated glovebox workcell design". *Waste Management Symposium*. 2018.
- A. Allevato, M. Horn, M. Pryor. "Demonstrating Autonomous and Robust Sorting in a Glovebox Environment". *American Nuclear Society Decommissioning and Remote Systems*. 2016.
- A. Allevato, M. Pryor. "Characterizing Glovebox Automation Tasks using Partially Observable Markov Decision Processes". *American Nuclear Society Decommissioning and Remote Systems*. 2016.

## Refereed Posters and Workshops

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- A. Allevato, K. Knese. "Using ROS2 for Vision-Based Manipulation with Industrial Robots". *Robot Operating System Conference (ROSCon)*. 2017.
- A. Allevato, A. Sharp, M. Pryor. "Getting the Shot: Socially-Aware Viewpoints for Autonomously Filming Tasks". *IEEE International Workshop on Advanced Robotics and its Social Impacts (ARSO)*. 2017.
- B. Anderson, A. Allevato, A. von Sternberg, M. Pryor. "Sensor Fusion for Autonomous Remote Inventory Validation". *International Conference on Robotics and Automation (ICRA) Late-Breaking Results*. 2015.
- A. Allevato, T. Lu, M. Pryor. "Using a Depth Camera for Object Classification in Nuclear Gloveboxes". *American Nuclear Society Student Conference Technical Session*. 2015.
- R. Simon, A. Allevato, M. Dong, and L. Dasi. "Assessment of work-load severity of the left ventricle in concomitant heart valve disease". *ASME International Mechanical Engineering Congress and Exposition*. 2012.

## Invited Talks

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"Frontiers in Machine Learning for Robotics," guest lecture, *UT Austin Future of Humanity Class*. March 2017.

## Leadership and Service

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Creator/contributor for several open-source robotics software packages (available on GitHub):

- Point cloud-based object recognition and pose perception

- Standardized Robot Operating System (ROS) messages for visual object detection

- Robot infrastructure code, e.g. gripper control, synchronized ROS launch, human-robot interface panel

Regular volunteer for UT Austin's Explore UT outreach event

Mentored 3 undergraduate researchers in robotics: Meera Wakim, Samir Hassam, and Tom Lu

## Affiliations

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Institute of Electrical and Electronics Engineers (IEEE)	2015-Current
American Nuclear Society (ANS)	2014-2018
American Society of Mechanical Engineers (ASME)	2012-Current