

# Adam Conkey

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(330) 224-1159

## EDUCATION

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- **University of Utah** Salt Lake City, UT  
*Ph.D. Computing: Robotics (In Progress) – GPA: 3.9* August 2016 – Present
- **DePaul University** Chicago, IL  
*M.S. Computer Science: Artificial Intelligence – GPA: 4.0* January 2014 – June 2016
- **Carnegie Mellon University** Pittsburgh, PA  
*B.S. Mathematics and Philosophy – GPA: 3.4* August 2007 – May 2011
  - Honors Thesis: “Deepening the Automated Search for Gödel’s Proofs”

## PROFESSIONAL EXPERIENCE

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- **Amazon Robotics** North Reading, MA  
*Research Scientist Intern: Advanced Robotics* May 2019 – August 2019
  - Implemented an end-to-end robotic system for performing a material handling task using C++ and ROS.
  - Developed a Python application for discrete event simulation, visualization, and timing analysis.
- **Accenture** Austin, TX  
*Associate Software Engineer* April 2015 – July 2016
  - Developed new application features for state healthcare exchanges.
  - Engaged as a versatile member of an Agile Scrum team by contributing to the Java framework, SQL database interface, front-end graphical interfaces, and the back-end Oracle Policy Automation suite.
- **United States Patent and Trademark Office** Alexandria, VA  
*Patent Examiner in Computer Science* May 2012 – November 2013
  - Examined patent applications in the art of compiler design and software development tools.
  - Conducted exhaustive searches of the prior art and issued official decisions regarding the patentability of claimed inventions in view of discovered references.

## RESEARCH EXPERIENCE

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- **Utah Learning Lab for Manipulation Autonomy** Salt Lake City, UT  
*Graduate Research Assistant (Advisor: Tucker Hermans)* August 2016 – Present
  - Investigating new deep learning and planning methods for probabilistic skill planning under uncertainty with learned multisensory representations.
  - Formulated and implemented a new algorithm for robot motion planning under uncertainty.
  - Developed novel methods for learning robot skills from human demonstration with movement primitives.
- **Scientific Computing and Imaging (SCI) Institute** Salt Lake City, UT  
*Independent Study (Advisor: Bei Wang Phillips)* January 2017 – May 2017
  - Investigated the application of Topological Data Analysis to time-varying functional brain networks in order to characterize resting-state brain activity of patients with Autism Spectrum Disorder.
- **AProS - Automated Proof Search** Pittsburgh, PA  
*Student Researcher (Advisor: Wilfried Sieg)* November 2008 – May 2011
  - Led an effort to improve the search efficiency of an automated theorem prover called AProS.
  - Developed syntactic abbreviations for the display of concise and coherent formal proofs as a key contribution to the project’s expansion into set theory and metamathematics.

## TECHNICAL SKILLS

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Python, C++, Java, ROS, PyTorch, TensorFlow, Keras, Gazebo, NVIDIA IsaacGym, CoppeliaSim, DARTSim, Orocos, KDL, Eigen, MoveIt, rviz, URDF, Linux, Git, Docker, Jenkins, LaTeX

## ROBOTS AND SENSORS

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KUKA iiwa, KUKA LBR4, Rethink Robotics Baxter, FANUC Cobot, RightHand Robotics ReFlex TakkTile hand, Kinect RGB-D cameras, Optoforce Force/Torque sensor

## PUBLICATIONS

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- A. Conkey and T. Hermans. “Planning under Uncertainty to Goal Distributions”. *arXiv preprint*, 2021.
- A. Conkey, “Representation Learning for Multisensory Perception and Planning.” *Robotics: Science and Systems (RSS) Pioneers Workshop*, 2020.
- A. Conkey and T. Hermans. “Active Learning of Probabilistic Movement Primitives.” *IEEE-RAS International Conference on Humanoid Robots (Humanoids)*, 2019.
- A. Conkey and T. Hermans. “Learning Task Constraints from Demonstration for Hybrid Force/Position Control.” *IEEE-RAS International Conference on Humanoid Robots (Humanoids)*, 2019.

## SERVICE

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- Paper reviewer (31 total reviews): IEEE Robotics and Automation Letters (RA-L), Robotics: Science and Systems (RSS), IEEE International Conference on Robotics and Automation (ICRA), IEEE International Conference on Intelligent Robots and Systems (IROS), Conference on Robot Learning (CoRL), IEEE-RAS International Conference on Humanoid Robots (Humanoids), IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN), RSS Pioneers Workshop 2020

## OUTREACH

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- Bio-Med Science Academy Career Day 2019 (Rootstown, OH): Invited speaker to discuss academic and job opportunities in robotics with graduating high school students interested in STEM subjects.
- University of Utah Engineering Day 2016-2018: Developed and presented an interactive demonstration with a Baxter robot to high school and elementary school students.

## AWARDS AND HONORS

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- Selected participant Robotics: Science and Systems (RSS) Pioneers Workshop (2020)
- CMU Mellon College of Science Research Honors (2011)
- CMU Humanities and Social Sciences College Honors (2011)
- Fulbright Alternate - German Research Center for Artificial Intelligence (2011)
- Laboratory for Symbolic and Educational Computing (LSEC) Fellowship (2010)
- CMU Summer Undergraduate Research Fellowship (2009)