Adam Conkey

adam.conkey@gmail.com (330) 224-1159 linkedin.com/in/adamconkey adamconkey.github.io

Education

- **University of Utah** — Salt Lake City, UT
  Ph.D. Computing: Robotics – GPA: 3.9 — *Aug 2016 – Dec 2022*
- **DePaul University** — Chicago, IL
  M.S. Computer Science: Artificial Intelligence – GPA: 4.0 — *Jan 2014 – Jun 2016*
- **Carnegie Mellon University** — Pittsburgh, PA
  B.S. Mathematics and Philosophy – GPA: 3.4 — *Aug 2007 – May 2011*

Professional Experience

- **HRL Laboratories** — Malibu, CA
  Robotics Machine Learning Research Scientist — *Aug 2022 – Present*
  - Developing mission-focused solutions for autonomous robot manipulation in undersea environments.
- **Utah Learning Lab for Manipulation Autonomy** — Salt Lake City, UT
  Graduate Research Assistant (Advisor: Tucker Hermans) — *Aug 2016 – Dec 2022*
  - Investigated deep learning approaches to multisensory representation learning for skill planning.
  - 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.
- **Amazon Robotics** — North Reading, MA
  Research Scientist Intern: Advanced Robotics — *May 2019 – Aug 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 — *Apr 2015 – Jul 2016*
  - Developed new front-end and back-end application features for state healthcare exchanges.
  - Engaged as a versatile member of an Agile Scrum team for Java, SQL, and user interface development.
- **United States Patent and Trademark Office** — Alexandria, VA
  Patent Examiner in Computer Science — *May 2012 – Nov 2013*
  - Examined patent applications in the art of compiler design and software development tools.
  - Conducted exhaustive searches of prior art to issue decisions on the patentability of claimed inventions.

Skills

- **Languages:** Python (*Advanced*), C++ (*Intermediate*), Java (*Beginner*), Rust (*Learning*)
- **Software:** ROS, MoveIt, BehaviorTree.CPP, PyTorch, TensorFlow, OpenCV, Qt
- **Simulators:** Drake, NVIDIA Isaac Gym, Gazebo, DART, CoppeliaSim, PyBullet
- **Robots:** Orion 7P, KUKA iiwa, KUKA LBR4+, FANUC Cobot, Rethink Robotics Baxter
- **Sensors:** RealSense RGB-D cameras, Kinect RGB-D cameras, Optoforce 6-Axis Force/Torque sensor
- **Misc:** Linux, Git, Docker, Jenkins, LaTeX

Publications

- Y. Huang, N.C. Taylor, A. Conkey, W. Liu, and T. Hermans. "Latent Space Planning for Multi-Object Manipulation with Environment-Aware Relational Classifiers". *arXiv preprint*, 2023.
- Y. Huang, A. Conkey, and T. Hermans. "Planning for Multi-Object Manipulation with Graph Neural Network Relational Classifiers". *International Conference on Robotics and Automation (ICRA)*, 2023.
- A. Conkey "Skill Planning Under State and Goal Uncertainty for Robot Manipulation Tasks". *Ph.D. dissertation*, 2022.
- 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.