

# Kenneth Shaw

kshaw2@andrew.cmu.edu

## INTERESTS

Dexterous Manipulation (Robot Hands), Learning from Internet Videos, Demonstration Guided Learning

## EDUCATION

### Carnegie Mellon University Robotics Institute

- PhD Student in Robotics Aug 2020 – Current
  - Advisor: Prof. Deepak Pathak
  - Thesis: Designing and Teaching Dexterous Robot Hands

### Georgia Institute of Technology

- BS in Computer Engineering (Minor: CS in Intelligence) Aug 2017 – May 2020
  - Advisor: Prof. Sonia Chernova and Dr. Harish Ravichandar in RAIL Lab
  - GPA: 3.94 / 4.00

## SELECT

## PUBLICATIONS

### CONFERENCES

- C1 J. Liu, Y. Li, **K. Shaw**, T. Tao, R. Salakhutdinov, D. Pathak "FACTR: Force-Attending Curriculum Training for Contact-Rich Policy Learning" In Submission
- C2 T. Tao, M. Srirama, J. Liu, **K. Shaw**, D. Pathak "DexWild: Dexterous Human Interactions for In-the-Wild Robot Policies" In Submission
- C3 **K. Shaw**, D. Pathak "Demonstrating LEAP Hand V3: Low-Cost, Easy-to-Assemble, High-Performance Hand for Robot Learning" In Submission
- C4 **K. Shaw\***, Y. Li\*, J. Yang, MK. Srirama, R. Liu, H. Xiong, R. Mendonca, and D. Pathak "Bimanual Dexterity for Complex Tasks" CoRL 2024.
- C5 H. Xiong, R. Mendonca, **K. Shaw**, D. Pathak "Adaptive Mobile Manipulation for Articulated Objects In the Open World" In Submission
- C6 S. Uppal, A. Agarwal, H. Xiong, **K. Shaw**, D. Pathak "SPIN: Simultaneous Perception, Interaction and Navigation" CVPR 2024.
- C7 A. Kannan\*, **K. Shaw\***, S. Bahl, P. Mannam, D. Pathak "DEFT: Dexterous Fine-Tuning for Real-World Hand Policies" CoRL 2023.
- C8 P. Mannam\*, **K. Shaw\***, D. Bauer, J. Oh, D. Pathak, N. Pollard "DASH: A Framework for Designing Anthropomorphic Soft Hands through Interaction" IEEE Humanoids 2023 **Best Oral Paper Award Finalist**
- C9 A. Agarwal, S. Uppal, **K. Shaw**, D. Pathak "Dexterous Functional Grasping" CoRL 2023.
- C10 **K. Shaw**, A. Agarwal and D. Pathak, "LEAP Hand: Low-Cost, Efficient, and Anthropomorphic Hand for Robot Learning." RSS, 2023.
- C11 **K. Shaw\***, S. Bahl\*, and D. Pathak, "VideoDex: Learning Dexterity from Internet Videos." CoRL, 2022.
- C12 A. Sivakumar\*, **K. Shaw\***, and D. Pathak. "Robotic Telekinesis: Learning a Robotic Hand Imitator by Watching Humans on Youtube." RSS, 2022.
- C13 J. Kolb, M. Kishore, **K. Shaw**, H. Ravichandar, S. Chernova. "Predicting Individual Human Performance in Human-Robot Teaming." RO-MAN, 2021.
- C14 G. Neville, H. Ravichandar, **K. Shaw**, S. Chernova. "Approximated Dynamic Trait Models for Heterogeneous Multi-Robot Teams." IROS, 2020.
- C15 D. Davis, **K. Shaw**, S. Rizvi, M. Davis, "Quantum computing: Evaluating Potential Quantification of Projective Psychological Test Scoring." MODSIM WORLD, 2019.

### JOURNAL ARTICLES

- J1 **K. Shaw**, S. Bahl, A. Sivakumar, and D. Pathak, "Learning Dexterity from Human Hand Motion in Internet Videos" IJRR Special Issue 2023.
- J2 H. Ravichandar, **K. Shaw**, S. Chernova. "Strata: Unified Framework for Task Assignments in large teams of Heterogeneous Agents." AAMAS- JAAMAS track, 2021.
- J3 B. Nye, D. Davis, S. Rizvi, K. Carr, W. Swartout, R. Thacker, D. Cobbins, **K. Shaw**. "Feasibility and usability of MentorPal, a framework for rapid development of virtual mentors." Journal of Research on Technology in Education (JTRE), 2019.

## FELLOWSHIPS & AWARDS

- NSF Graduate Research Fellowship Recipient 2020 – 2023
- Warren Batts & Austin Brown Innovation Award scholarship 2019
- PennApps Hackathon Top 30 Winner: Tensorflow Image recognition to facilitate recycling. 2018
- HackMIT Sia API challenge 1st Place: Used the Sia Blockchain for ad supported file storage. 2018

## ACADEMIC SERVICE

- AI4ALL at CMU: Mentorship of high school students in AI projects 2021
- Reviewer, ICRA 2023/2024, RA-L 2023, RA-L 2024, IROS 2024 (2x), T-RO 2024, CoRL 2024

■

**SUMMER  
INTERNSHIP  
EXPERIENCE**

- Robotics Institute Summer Scholar:** Carnegie Mellon Univ. Jun 2019 – Sep 2019
- Visited under Prof. Changliu Liu's Intelligent Control Lab on Human-Robot Collaboration.
- University of Southern California:** Institute for Creative Technologies May 2018 – Sep 2018
- Visited under Dr. Benjamin D. Nye, Director for Learning Science Research, originally a 10 week NSF REU, extended to 12 weeks for additional development.

**MISC. PROJECT  
EXPERIENCE**

- Lightning From Space:** VIP (Vertically Integrated Projects) at GT Jan 2018 – May 2020
- Developing new multi-modal communication platform using APRS as well as cellular for bidirectional communication from weather balloon flights to ground.
- MIT Launch:** Orama
- Investigated Two-Factor Password Authentication using facial recognition. May 2017 – Sep 2017
- ThermoFi:** Wireless Thermometer and Humidity Sensor Startup 2015 – 2017
- Worked to create and sell sensors that monitored the home.
  - Created a server (node.js) which showed monitoring information about the home. (temperature, humidity, air quality)
- FRC Team 293:** High School Robotics 2013 – 2017
- Lead Control Systems Engineer, President, Robot Driver, Inspector
  - Worked on workshops educating new members on programming.
  - Led many projects such as the Onboard Auto-Targeting System project for "Boulder"/Dodgeball Shot Aiming using OpenCV, on Fine Mechanism Angle Control and Custom Control Boards using TI HID Driver.