

Collaborative Research: NRI: INT: Scalable, Customizable, Robot Learning with Humans

PI: Pieter Abbeel, UC Berkeley

Co-PIs: Anca Dragan (UC Berkeley), Charles C. Kemp (Georgia Institute of Technology), Deepak Pathak (Carnegie Mellon University)

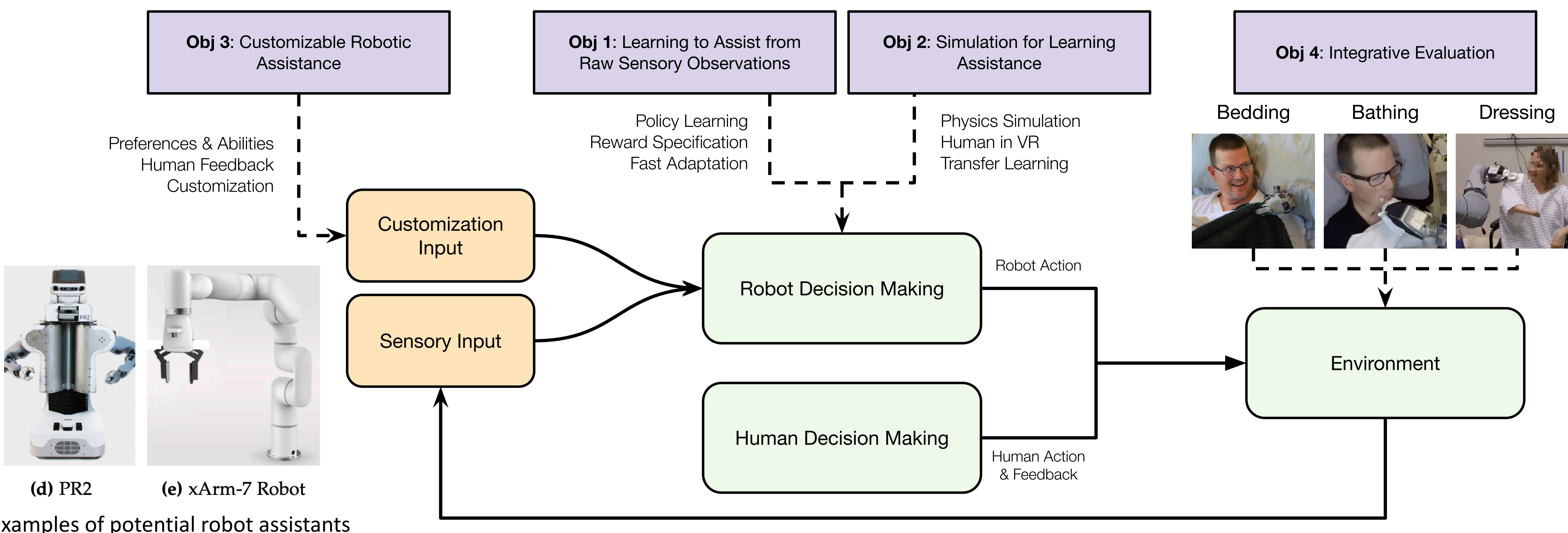
Overview: Robotic assistance with activities of daily living could increase the independence of people with disabilities and improve quality of life. While progress has been made towards such robotic-assistance, current systems rely on simplifying assumptions limiting their applicability. This project seeks to make foundational progress on developing assistive robots.

Key challenges

- Many activities of daily living require robots to manipulate fabric in coordination with people

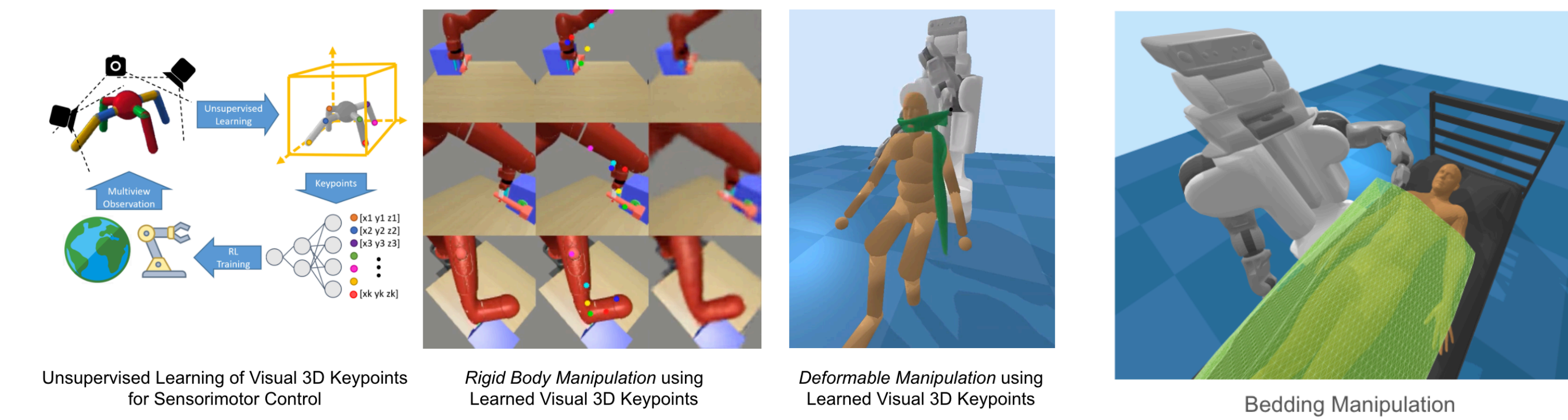
Scientific impact

- The results from this project will be open-sourced and help toward making robots for human a reality



Progress on Obj 1

- Unsupervised learning approach of 3-D keypoints



Progress on Obj 2

- Assistive Gym - physics simulation framework

Impact on society

- Assistive robots (e.g. dressing and body bathing) for people with disabilities, which has the potential to help millions of people achieve greater independence and a higher quality of life

Impact on education

- Assistive Gym will be incorporated into the PI's courses on Robotics and Reinforcement learning
- Students will interactively learn how robots can provide physical assistance to people with disabilities

Potential impact

- Versatile assistive robots could reduce financial challenges associated with professional caregivers, relieve the burden on informal caregivers, and empower older adults and people with disabilities to live more independently