

Schedule for the RSS 2006 Workshop: Manipulation for Human Environments

8:00-9:00 Coffee & baked goods
9:00-9:05 Welcome from the organizers

Session on platform design:

9:05-9:30

The UMass Mobile Manipulator UMan: An Experimental Platform for Autonomous Mobile Manipulation

Dov Katz, Emily Horrell, Yuandong Yang, Brendan Burns, Thomas Buckley, Anna Grishkan, Volodymyr Zhylkovskyy, Oliver Brock, and Erik Learned-Miller

9:30-9:55

A Robust Compliant Grasper for Unstructured Environments

Aaron Dollar and Robert Howe

9:55-10:20

Designing a Self-Stabilizing Robot For Dynamic Mobile Manipulation

Patrick Deegan, Bryan Thibodeau, and Rod Grupen

10:20-10:35

Discussion on platform design

Topics may include: 1. *off-the-shelf vs. custom robots* 2. *design trade-offs (eg. specialized vs. general purpose)* 3. *applications and their implications for design* 4. *performance requirements and evaluation*

10:35-10:50 Tea break

Session on learning:

10:50-11:15

Uncovering Success in Manipulation

Chad Jenkins, Alan Peters, and Robert Bodenheimer

11:15-11:40

Learning to Grasp Novel Objects using Vision

Ashutosh Saxena, Justin Driemeyer, Justin Kearns, and Andrew Ng

11:40-12:05

A Framework for Learning Declarative Structure

Stephen Hart, Shichao Ou, John Sweeney, Rod Grupen

12:05-12:20

Discussion on learning

Topics may include: 1. *What could/should be learned?* 2. *learning methodologies (teleoperation, simulation, demonstration, etc.)* 3. *learning vs. heuristics and hand designed solutions* 4. *preferred algorithms, features, etc.*

12:20-1:50 Lunch

Session on task execution:

1:50-1:55 Introduction to the afternoon session

1:55-2:35 **Keynote: Rodney Brooks**

2:35-3:00

Operating Humanoid Robots in Human Environments

Neo Ee Sian, Takeshi Sakaguchi, Kazuhito Yokoi, Yoshihiro Kawai, and Kenichi Maruyama

3:00-3:25

Real-time Planning of Mobile Manipulation in Dynamic Environments of Unknown Changes

John Vannoy and Jing Xiao

3:25-3:50

Humanoid Mobile Manipulation Using Controller Refinement

Rob Platt, Robert Burridge, Myron Diftler, Jodi Graf, Mike Goza, and Eric Huber

3:50-5:00

Poster & demo session with refreshments:

A Basic Level of Attentional Behavior for Manipulation, Interaction and Learning

Stephen Hart, Shichao Ou, John Sweeney, and Rod Grupen

Imitation Learning of Whole-Body Grasps

Kaijen Hsiao and Tomas Lozano-Perez

Demonstration of Human-in-the-Loop Control of an Assistive Robot Arm

Kate Tsui and Holly Yanco

TBA

Rob Platt

TBA

Eduardo Torres-Jara

TBA

Aaron Edsinger

5:00-5:15

Lightning talks

(short talks < 5 minutes each, sign up during the day, time allotted will depend on demand)

5:15-6:00

Discussion of grand challenges for manipulation in human environments

Goals for the discussion include: 1. create a list of grand challenges 2. create a list of core capabilities 3. discuss methodologies/approaches for achieving these tasks 4. solicit predictions for the future of manipulation in human environments