Editor's Note:
It is my pleasure to bring to your the second newsletter of our technical committee. The newsletter is a brief snapshot of the ongoing projects and opportunities in our area. If you would like your announcement to appear in the next newsletter, simply send me an email (dberenso@cs.cmu.edu). Thanks to all the contributors!

Technical Committee on Mobile Manipulation Newsletter (June 2011)

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1. NEW ROBOT VIDEOS

--Check out the latest videos of the DARPA ARM:
http://www.youtube.com/theARMrobot (From Natalie M. Salaets)

--A new video of HERB dancing!
http://www.youtube.com/watch?v=dfHqHkQoG7Y (From Siddhartha Srinivasa)
[submitted to http://robotfilmfestival.com/]

--Shadow Robot's reactive approach to the manipulation stack:
automatic pick and place of a Coke can, with a simulated robot and
real data coming from a Kinect:
http://www.youtube.com/watch?v=lr3ooH4ay6E (From Ugo Cupcic)

--New video from a real-world industrial demonstration with the mobile manipulator "Little Helper":
http://www.youtube.com/watch?v=u4L0hC0FcHc (From Mads Hvilshøj)

--An integrated and fully autonomous eye-in-hand system for 3D object modeling. Integration of next best view, exploring the environment, and sensor-based path planning.
http://www.youtube.com/watch?v=hpAK00pS2Cw (From Liila Torabi)

--Robotic roommates shopping for and preparing Bavarian breakfast!
http://ias.cs.tum.edu/news/robotic-roommates-shopping-for-and-preparing-bavarian-

breakfast
(From Dejan Pangercic)

2. NEW PROJECT WEBSITES

--The Canadian and French companies Kinova and Robosoft recently merged their respective expertise in manipulation and service robotics for the new collaboration project COROBO. COROBO integrates the robot companion KOMPAÏ with the 6 DOF lightweight robot arm JACO to create a complete and unique mobile manipulation R&D platform. The first pictures of this realisation are available on this website: http://www.facebook.com/pages/KompaiTheRobot/115097121860721?ref=ts. (From François Boucher)

--SynTouch LLC is a start-up technology business that develops and manufactures tactile sensors for mechatronic systems. Our mission is to produce tactile sensors that mimic the human hand. SynTouch has been recently begun work on two Phase 2 Small Business Innovative Research (SBIR) Grants: one from the NIH for prosthetic hand integration (automated grip adjustment reflexes and conscious tactile feedback) and one from DARPA to develop haptic exploration and object discrimination robots. SynTouch is also building a BioTac interface kit for the Barrett and Shadow Robot hand, which will be available by Fall, 2011: http://www.syntouchllc.com/home.htm (From Nick Wettels)

3. NEW CODE RELEASES

--The Kavraki Lab (http://kavrakilab.org) is pleased to announce the initial release of the Open Motion Planning Library (OMPL). OMPL is a lightweight, thread-safe, easy to use, and extensible library for sampling-based motion planning. The code is written in C++, includes Python bindings and is released under the BSD license. OMPL is available at http://ompl.kavrakilab.org. (From Mark Moll)

--We are releasing the Constrained Manipulation Planning Suite (CoMPS), which consists of three openrave plugins and associated data files. CoMPS includes an implementation of the Constrained Bi-directional RRT (CBiRRT), an iterative IK solver, and a set of useful openrave functions for manipulation. The planning and inverse kinematics algorithms in this suite are designed for articulated

robots like robotic arms and humanoids. The algorithms in CoMPS allow robots to perform motion with a variety of simultaneous constraints including constraints on balance, closed-chain kinematics, and task-space constraints defined as Task Space Region (TSRs) and TSR Chains. Download the code at http://www.cs.cmu.edu/~dberenso/software.html (From Dmitry Berenson)

--The DARPA Autonomous Robotic Manipulation (ARM) program is developing software that enables robots, given only high-level direction, to autonomously grasp, manipulate and perform complex tasks in unstructured environments. Recently, an ARM robot known as "Robbie" was featured in an interactive exhibit at the Smithsonian National Museum of American History to give the public unique insight into robotics development firsthand. DARPA is also offering the public the ability to develop and test code to perform tasks in the robot simulator, then upload that code to the actual ARM robot and watch it execute the task in real-time via the web. For more information, please visit http://www.theARMrobot.com. Join our Facebook page: http://www.facebook.com/theARMrobot (From Natalie M. Salaets)

--MOPED is a real-time Object Recognition and Pose Estimation system. It recognizes objects from point-based features (e.g. SIFT, SURF) and their geometric relationships extracted from rigid 3D models of objects. The code is structured in two modules: first, a ROS-agnostic library called libmoped, in which all code for the 7-step algorithm is implemented; and second, ROS-enabled wrapper code that utilizes libmoped to read images from the network and to publish the detected objects. (From Siddhartha Srinivasa)

--Shadow Robot's manipulation stack (http://www.ros.org/wiki/shadow_robot) is now released as an ubuntu package as part of ROS. The package contains a simulated interface to our Arm and Hand. We also have a tutorial here: http://www.ros.org/wiki/sr_hand/Tutorials/Running%20the%20sr_object_manipulation%20stack%20%5BUNSTABLE%5D
(From Ugo Cupcic)

4. ANNOUNCEMENTS

--The International Summer Course on Robot Programming in Java will be at the Aegean seaside and just after RoboCup'11 istanbul. The course is half theory and half laboratory work, comprising in total 14 x 3

hours, from 13 July till 19 August 2011. Further particulars are available at the course web site: http://arf.iyte.edu.tr/~bkumova/teaching/RobotBehav (From Bora Kumova)