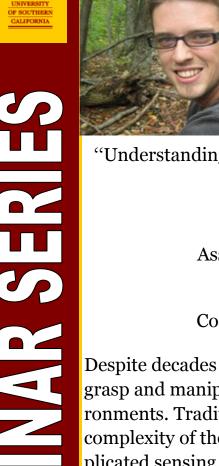
Engineering Neuroscience & Health

Department of Biomedical Engineering

Division of Biokinesiology and Physical Therapy





Presents:

Aaron Dollar Yale University

aaron.dollar@yale.edu

Monday

November 21, 2011

4:00 p.m.

Pizza will be served: 3:30-4 pm

"Understanding Human Hand Use to Motivate Design of Low-Dimensional Mechanical Hands""

Aaron Dollar, Ph.D.

Assistant Professor of Mechanical Engineering and Materials Science, Yale University Director of the GRAB Lab Co-founder and editor of RoboticsCourseWare.org

Despite decades of research, current robotic systems are unable to reliably grasp and manipulate a wide range of unstructured objects in human environments. Traditional approaches attempt to copy the immense mechanical complexity of the human hand in a stiff "robotic" mechanism along with complicated sensing and control schemes. Alternatively, by careful inclusion of adaptive underacted transmissions and tuned compliance, we have been able to achieve a level of dexterity and reliability as yet unseen in the robotics community. I will describe our ongoing efforts to study human grasping and manipulation during the activities of daily living as well as work towards developing robust, open-loop grasping and dexterous manipulation capabilities in engineered systems including robotics, prosthetics, and small aerial vehicles.

Locations: Seminar is simultaneously presented

UPC: HNB 100 — LIVE

Hedco Neurosciences Building

UPC Campus Map/Directions: http://www.usc.edu/about/visit/upc/

HSC: CHP 147 - Video Conference Center for the Health Professional

> HSC Campus Map/Directions: http://www.usc.edu/about/visit/hsc/

Organized by Professor Francisco Valero-Cuevas http://bbdl.usc.edu/ENH

Web Cast

 $\underline{http://capture.usc.edu/college/Catalog/pages/catalog.aspx?catalogId=946350f1-ca84-40e7-b867-e16adba01e4e1264061-e16adba01e4e16406164061-e16adba01e4e16406164061-e16adba01e4e16406164061-e16adba01e4e164061-e16adba01e4e164061-e16adba01e4e164061-e16adba01e4e164061-e16adba01e4e164061-e1$