

## Humanoids: Design Architecture and Human-Robot Interaction

### Objectives:

Humanoids are biped robots that mimic human form and function. Korea is a world-leader in the electro-mechanical design of humanoids. However, such robots currently lack the perception and cognition to function intelligently. The US is a world-leader in artificial intelligence and machine learning. However, American roboticists lack humanoid platforms to apply such algorithms. This session serves to bring Korean and American roboticists together to identify synergistic activities that can advance the state-of-the-art of humanoids.

### Scope:

This symposium will consist of four 3-hour sessions as follows:

#### Session 1: July 17, 2009 (AM)

Humanoid Software Architecture

Chair: Professor Doug Blank, Bryn Mawr Women's University

Time	Speaker	Topic
09:00	Prof. Doug Blank (Bryn Mawr)	Hubo Humanoid Software Overview
09:30	Prof. Stefan Shaal (USC)	SARCOS Lessons Learned
10:00	Prof. James Kuffner (CMU)	ASIMO Lessons Learned
10:30	Rob Ellenberg (Drexel)	Hubo Software Programming Demo
11:00	Discussion	
12:00	Prof. Bruce Maxwell (Colby College)	Scribe Report
12:30	Adjourn	

#### Session 2: July 17, 2009 (PM)

Mini-Hubo Design

Chair: Professor Dennis Hong, Virginia Tech

Time	Speaker	Topic
14:00	Prof. Dennis Hong (Virginia Tech)	Mini-Hubo Design and User Tutorial
15:00	Prof. Dan Lee (Univ. Pennsylvania)	Mini-Hubo User Experiences
15:30	Prof. Russ Tedrake (MIT)	Miniature Humanoid Experiences
16:00	Joe Hays (Virginia Tech)	Mini- and Virtual- Hubo
16:30	Discussion	
17:30	Prof. James Kuffner (CMU)	Scribe Report
18:00	Adjourn	

**Session 3:** Saturday, July 18, 2009 (AM)  
 Human-Robot Interaction  
 Chair: Professor Bruce Maxwell

Time	Speaker	Topic
09:00	Prof. Bruce Maxwell	Hubo Interaction
09:30	Prof. Javier Movellan (USCD)	Baby Humanoid Lessons Learned
10:00	Prof. Cynthia Brezeal (MIT)	Social Robot Interaction
10:30	Dr. Stewart Tansley (Microsoft)	Microsoft Human-Robot Interaction Program
11:00	Discussion	
12:00	Prof. Dennis Hong (Virginia Tech)	Scribe Report
12:30	Adjourn	

**Session 4:** Saturday, July 18, 2009 (PM)  
 Humanoids and Future Applications  
 Chair: Professor Paul Oh (Drexel)

Time	Speaker	Topic
14:00	Prof. Paul Oh (Drexel)	PIRE Project Status and Lessons Learned
15:00	Prof. George Lee (Purdue)	Humanoids: Network
15:30	Prof. Frank Park (Seoul National)	Humanoids: Dynamics
16:00	Al Rizzi (Boston Dynamics)	Big Dog: Lessons Learned
16:30	Discussion	
17:30	Prof. Dan Lee (Univ. Pennsylvania)	Scribe Report
18:00	Adjourn	

**Session Titles and Topics Covered:**  
 (See above)

**Session Chairs and Co-Chairs:**  
 (See above)

**Special Publications:**

UKC Symposium talks and discussions will be processed for potential submission to the IEEE Robotics and Automation Magazine.