

CS 378: Autonomous Intelligent Robotics (FRI)

Dr. Todd Hester

Are there any questions?

Talks

- **Keith Sullivan**

- Hierarchical Multiagent Learning from Demonstration

- **Junaed Sattar**

- A Multimodal Approach Towards Robust Human-machine Interaction

Upcoming Talks

- **Justin Hart**

- Robot Self Modeling & Creating Perceptions of Agency
- Friday, April 19, 11 AM, PAI 3.14

- **Michael Kaess**

- Apr. 23, 2013, 11:00am-12:00pm, ACE 2.302
- "Robust and Efficient Real-time Mapping for Autonomous Robots"

- **Yasutaka Furukawa**

- Apr. 25, 2013, 11:00am-12:00pm, GDC 2.216
- "Reconstruct and Visualize the World: From Academic Research to Product Deployment"

Logistics

- Undergraduate Research Forum
- Piyush's Study
 - Last name A-J
 - 2 points on final project grade
 - Finish by 5pm tonight
- Undergraduate Research Opportunity
 - sriram@austin.utexas.edu
- Topic Schedule
 - Today - Human Robot Interaction
 - Tuesday 4/23 - Multi-Robot Coordination
 - Tuesday 4/30 - Reinforcement Learning

Demos

- Nothing formal or prepared required
- Just show whatever you have working
- Visualizations, etc.
- About 5 minutes

Demos This Thursday

- GUI - K Delvadiya, Bastion Fennell, Thomas Kim
- Gesture_recognition - Cindy Jaimez, Ji Won Min, and Andrew Scott
- Wifi Localization - Moises Holguin, Chester Omenukor, Eric Maras
- Body Scanning - Jackson Wu, Jordan Torres
- Robot_Personality - Andy Wickham, Tony Wickham, Ryan Zabcik
- Object_Avoidance - Oliver Croomes, Paige Hinkle, Morgan Ederton
- Brain_Controlled_Robots - Loyce Gayo, Andrew Nyugen, John Flores

Demos Next Thursday

- Visual_Odometry - Gisela Rossi, Hernaldo Nunez
- InteractiveTouchKiosks - Matt Broussard, Robert Lynch
- PersonRecognition - Ethan Jennings, Mukund Rathi, Chris de la Iglesia
- WiFi_Localization - Robert Lynch, Josh Eversmann
- MappingAndNavigation - Emily Tarrant, Kim Phung N Tran
- Obstacle Navigation - Victor Yap, Daniel Cheng, Eysa Lee
- Task Allocation - Greg Cerna, Zo Asmail
- BuildingInfoUI - Karl Kuhlman

Today

- Human Robot Interaction

Example of Human Robot Interaction

- Assistive Technology
 - Robot wheelchairs
 - Robot rehab devices
- Search and rescue
- Factory robot
- Home assistant robot
- Tour guide

Smart Wheelchair



Companion Robot



Baxter



Search and Rescue



Interaction roles

- Supervisor
- Teammate
- Assistant
- Operator
- Mechanic / Programmer
- Bystander

Slides

<http://www.cs.columbia.edu/~allen/F12/hri-lecture.pdf>

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HRI Metrics

Adapted from [Goodrich,Olsen,2003]

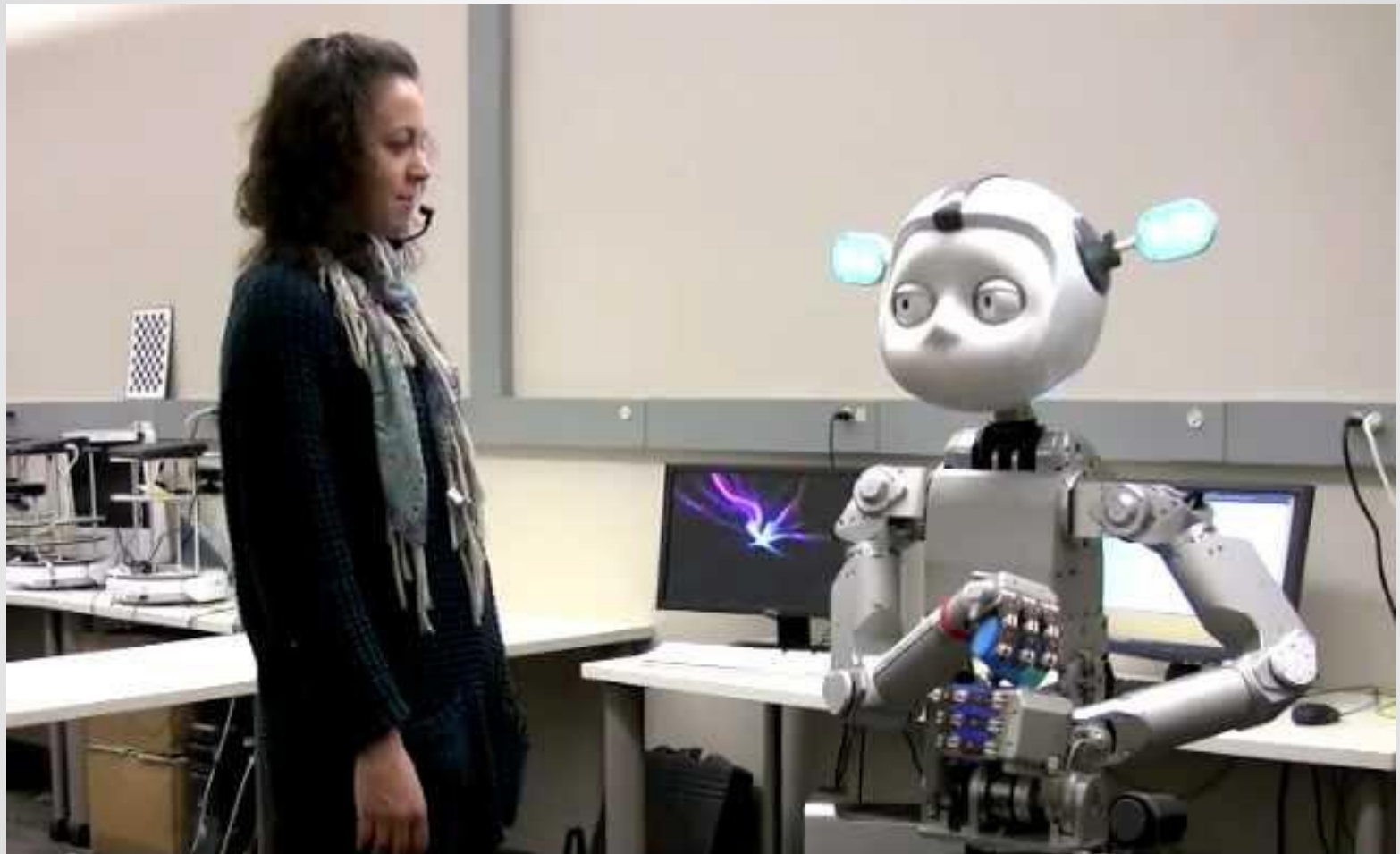
- Neglect time (NT)
 - Measures the decrease in the effectiveness of a robot as it is neglected
- Interaction time (IT)
 - Measures the increase in the effectiveness of a robot as the interaction time between a user and a robot increases

Slides

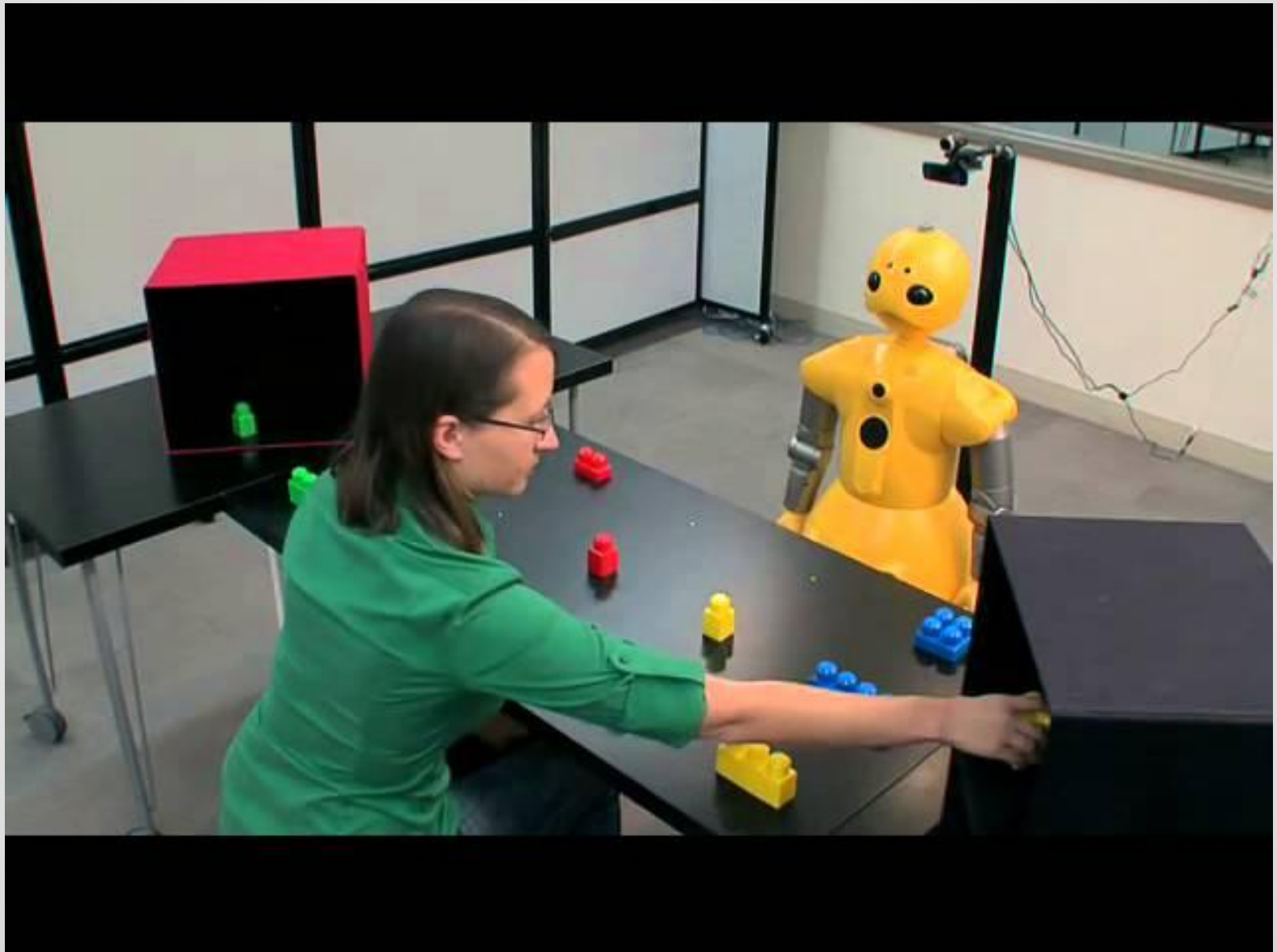
<https://dspace.ist.utl.pt/bitstream/2295/786986/1/human-robot-interaction.pdf>

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tweenbots.com



Teacher: No Simon, you cannot.





Readings

- Tell us about what paper you read
- What did they do?
- How did they test it?
- How does it relate to our project?

Thursday

Meet in Lab