

# Robocup, Metrics HRI Tasks

Deebul Nair, Prof. Dr. Teena Hassan

H-BRS

# Human Robot Interaction in Competitions

- METRICS HEART MET
- Robocup@Home

# METRICS HEART MET

## Description

- ① The robot is tasked with assisting a person at home by fetching an item for them.
- ② The person communicates to the robot which item they would like, and where it is located.
- ③ The robot should navigate to the given location, find the item, grasp it, and bring it back to the person and safely hand it over to them.

- Evaluation in 3 phases
- Phase 1 is HRI

# METRICS HEART MET

## Phase 1 : Communication with the person regarding the item and its location

- The robot reaches the persons at A, interrupting their conversation in a socially acceptable manner, and asking them whether they would like the robot to bring them something.
- The human can respond in 3 different ways
  - The person responds by speaking to the robot
  - The person does not reply to the robot, but gestures that they would like something (for example, by nodding their head, or showing a thumbs up sign)
  - Hybrid combination of speaking and actions

## Robocup@Home Test 5.3 Receptionist

Description : The robot has to take two new guests to the living room to introduce them and offer a free place to sit, while maintaining appropriate gaze.

- Host: The host's name and favorite drink will be announced before the test. The host is already sitting in the living room.
- A Bell rings and the robot has to open the door (or door is already opened)
- Guests have to be guided to the living room to be introduced.
- Each of the guest will arrive separately
- The robot must welcome the guest and ask for his/her name
- Robot guides the user to the living room where the guest is sitting.
- Robot introduces the guest to the host
- The second guest arrives
- The robot does the same routine.
- The robot has to introduce both the guest to each other .

## Robocup@Home Test 6.3 Restaurant

Description: The robot retrieves and serves orders to several customers in a real restaurant previously unknown to the robot

- Detect calling or waving customer, reach a customer's table without prior guidance/training. Take and serve all orders.
- This task takes place in a real restaurant fully equipped and in business
- Robot has to detect the customer who is waving
- Navigate towards the customer
- Interact with the customer and take his order
- Can take multiple order
- Go to the Barman . Explain order and get the items
- Serve the order to the customer

# Videos

- Homer Uni Koblenz <https://www.youtube.com/@homerUniKoblenz/videos>
- TU Eindhoven <https://www.youtube.com/watch?v=oA1qxCpsFZE>
- EIC chula <https://www.youtube.com/watch?v=pyVD-kSujoA>
- Research : Socially accepted robo-waiter behaviour  
<https://www.youtube.com/watch?v=1Xcs6MAKWxk>

# Rulebooks

- ① METRICS HEART MET Rulebook
- ② Robocup Rule book