

# HRI Reading Group

@ Instituto Superior Técnico

Meeting #1 (23 Feb 2018)

**Welcome!**

# Announcements

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Group website: <https://gaips.inesc-id.pt/hri-reading-group/>

You can suggest a paper or a topic for us to consider by sending us an email.

Proposed structure: Half the session discussing the paper and its generalizability; half the session open discussion (moderated by us).

Cake?

# Paper

## Data-driven HRI: Learning social behaviors by example from human-human interaction

Liu, P., Glas, D.F., Kanda, T. and Ishiguro, H.

(2016) IEEE Transactions on Robotics, 32(4), pp.988-1008

# Approach taken in the paper

## Pros

- Their data-driven model can generalize behaviours to other domains
- The modalities of behaviours they choose to analyse (location, speech)
- Capable of answering with natural speech acts

## Cons

- Artificial role-play scripted
- Their abstraction might need some domain knowledge
- They assume a one-on-one interaction
- No “understanding” of the interaction
- Orientation of the robot has a strong role in HRI and seems to have been neglected

### Features used:

- Position (orientation?): easiest to transfer to robot
- Speech behaviors: generalizability is tricky, error prone

# Using HHI to model HRI

## Pros

- Robots can achieve fair performance when performing like humans
- We are able to create and test new theories of interaction/behaviour
- Allows for different roles/interactions with the humans
- Humans expect human style when interacting with robots

### Challenges:

- Typical “correspondence problem”
- Create behaviours for robots that are able to perceive things that we don't

## Cons

- Semantics seem to be missing
- Lose artistic potential to design the behaviours
- Non-anthropomorphic robots/smart environments. Perception of agent differs → Might not be a good idea to use a direct mapping
- Humans may not be the best models (Solution: be careful about the sample, e.g. use expert data when needed)

# When should robot design be inspired by humans?

## Should

- When they are anthropomorphic
- When we want to create more effective and natural relations

## Shouldn't

- High-risk scenarios (we want it to be safer than humans)
- Industrial (high-performance)
- Not to raise the expectations

### Challenges:

- Aren't we conditioning/limiting the robot's behaviours to our own limitations?
- Goals and embodiment of the robot may have a strong role on its perception by humans

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Meeting #2 (21/11/2018)

**Who is bringing the  
refreshment next week?**