Algorithmic Human-Robot Interaction

HRI 2019 Papers

Experiment Design

CSCI 7000

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Looking Ahead

3/26	**Tuesday:**	**Spring Break**
3/28	**Thursday:**	**Spring Break**
4/2	**Tuesday:**	**ROS, Computer Vision and Robot Control**
4/4	**Thursday:**	**HRI 2019 Papers, Evaluation Workshop**
4/9	**Tuesday:**	**Explainable AI and In-progress Project Presentations**
4/11	**Thursday:**	**Explainable AI and XAI Papers**
4/16	**Tuesday:**	**(Inverse) Reinforcement Learning**
4/18	**Thursday:**	**(Inverse) Reinforcement Learning and RL Papers**
4/23	**Tuesday:**	**Guest Lecture – Dr. Alessandro Roncone**

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Papers coming up:
xAI

Explanation-based Reward Coaching to Improve Human Performance via Reinforcement Learning by Tabrez et al.

Pro:

Con: Shivendra Agrawal

Improving Robot Controller Transparency Through Autonomous Policy Explanation by Hayes and Shah

Pro:

Con:

PRO:
Chandan Naik
Shohei Wakayama
Shruthi Sukumar

CON:
Ashwin Vasan
Jack Kawell

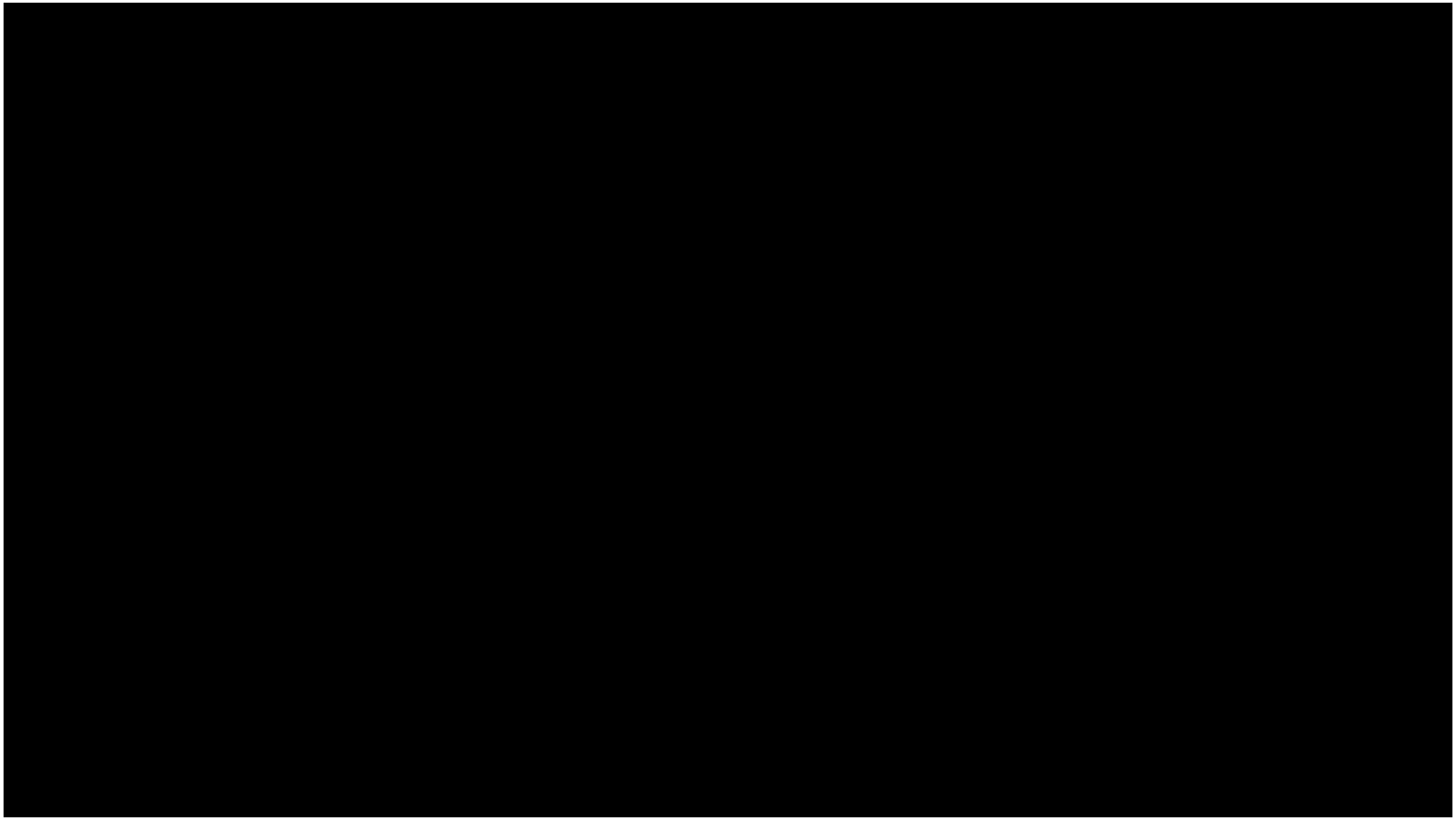
Papers for Today:
HRI 2019

Transfer depends on Acquisition: Analyzing Manipulation Strategies for Robotic Feeding by Gallenberger et al.

Pro: Shivendra Agrawal
Con: Karthik Palavalli

Balanced Information Gathering and Goal-Oriented Actions in Shared Autonomy by Brooks et al.

Pro: Matthew Luebbers
Con: N/A

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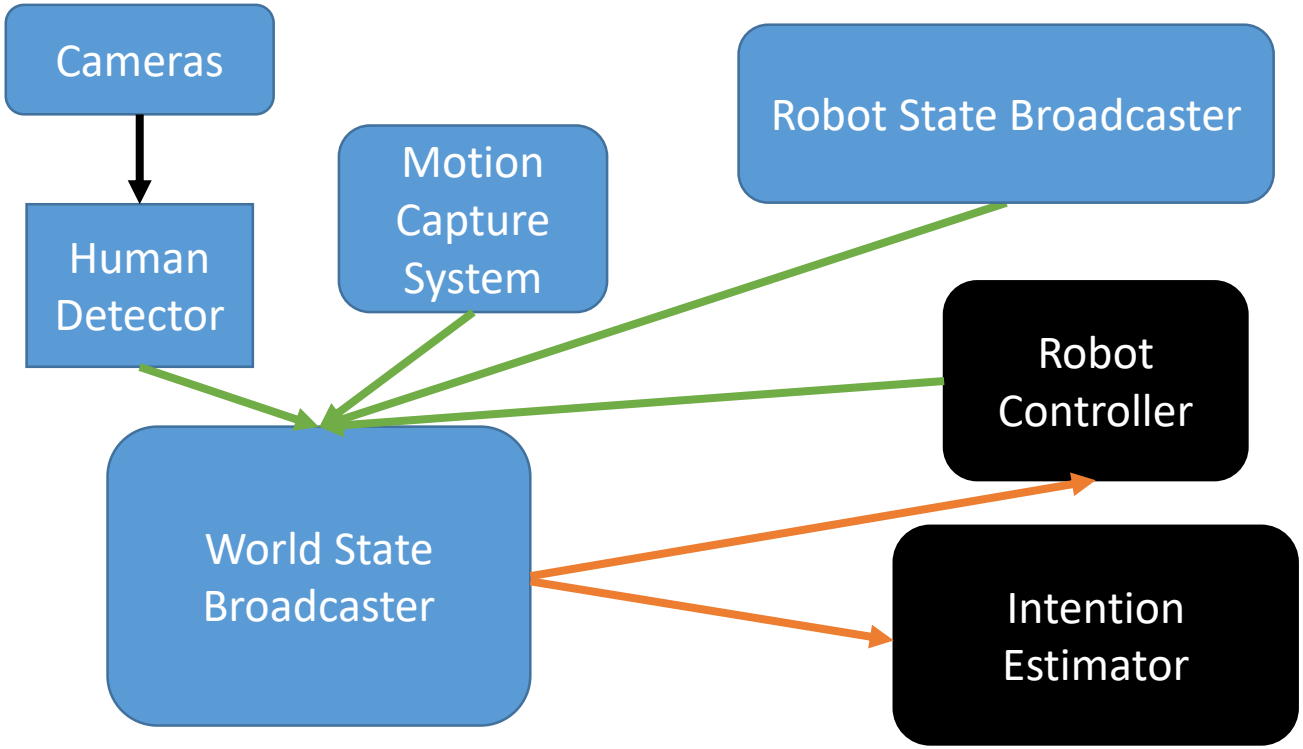
Designing Your System

What is the state your system acts within?
What are the features, and where do they come from?

Modular design is essential!



Writing Your Paper

Plenty of good examples from weekly readings!

How would a class like this present *your* work?

Anticipate the cons, take ownership of them!

Be very clear when defining the conditions under which your solution applies.

Designing Your Evaluation

Evaluation Design:

What are your hypotheses about your system?

How will you test them?

What are you trying to prove with this work?

Experiment Design:

Do you need human subjects?

Are your conditions likely to test your hypotheses?

Within-subjects or between-subjects?

Protocol design:

Someone not on your project should be able to run your experiment with this script!