Project Pitches

Project Pitch

Due: Start of class on Monday 1/30

This assignment is to give a pitch for an HRI research project you would be interested in pursuing. You will give a 2-3 minute presentation in class. Things you should cover in your presentation:

- What is your research question?
- How does this relate to human-robot interaction?
- Why do you think this would be interesting?
- Things you think you know how to do
- Things you don't think you know how to do

The presentation should be in the format of one or two PowerPoint slides (3 slides is a hard limit); alternatively you can show pictures, videos, or websites. This format mimics the idea of "Madness" or "Fast-Forwards" that is becoming common at academic conferences and will give you practice at communicating an idea very quickly to a diverse audience.

After you finish the presentation, we will open up for questions. Pay attention to everyone's presentations. Before class, please make a post in response to this forum that contains your slides or some description of your project idea so that everyone can review your idea after the fact.

Due by midnight on Wednesday, 2/1 I will have you email me:

- Two to three projects you would be interested on working on
- (optional) One project you would definitely not want to work on

FAQ

How should I try to frame what I am pitching?

There are many places to draw inspiration from. One way to approach this is to think of an application area for robotics (e.g., healthcare (nursing homes or hospitals), domestic service, manufacturing assistance, sales, in commercial offices, agriculture, education, fitness, rehabilitation, space exploration etc.) and think about some of the issues robots might face interacting with people in such applications. Another way is to think about our project brainstorming session - what aspects of human-human communication might be useful for robots interacting with people? What might be challenging or interesting to study? Or you might want to think about how to integrate some aspect of robotics into your ongoing research. Think about the videos we have watched already, or try to go through some of the proceedings of the Human-Robot Interaction conference, issues of the Journal of Human-Robot Interaction, or a related venue such as RSS, ICRA, or CHI. Finally, feel free to draw inspiration from robots in the media (films, television, books) - what made them successful (or not)? How did they interact with people? What information do we need to achieve a robot with such capabilities?

Do I need to know how to do what I pitching?

At this stage we will work on a conceptual level. Don't worry if you have no idea of how to implement your idea. That type of thinking will be for when we split up into teams.

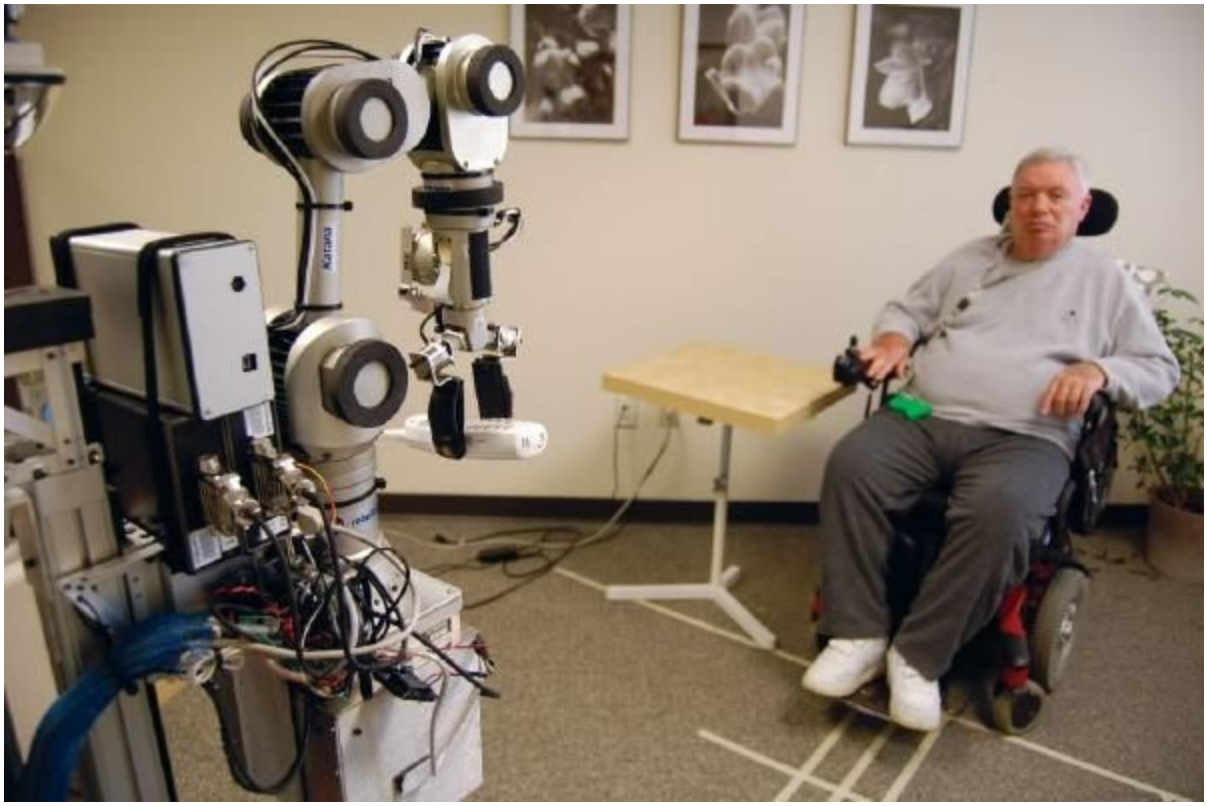
Do I need to know what robot I need to do what I pitching?

Not right now, but it might be good to start thinking about what abilities a robot would require to accomplish what you need. For instance, if you want to study gaze, articulated eyes may be necessary (or not). Gestures may require complex manipulators. We will talk about robot platforms later, so don't worry about it too much for now.
How would the ideas of human-human interaction turn into an interesting project?
Here are some ideas that come to my mind.
Vocal Prosody
Auditory and acoustic aspects of human speech can convey emotion, focus, intent, and importance. How might this information be utilized by robots to enable more natural and fluid interactions? Instead of normal speech, robots might use non-linguistic utterances (think R2D2 beeps) - what are the trade-offs in using such utterances?

Humor
People use humor in a variety of ways for many different purposes. Will the same types of humor that work for people work for robots? Might robots use humor to enhance interactions (e.g., improve motivation, increase perceptions of usability, etc.)? We often find robots "unintentionally" funny - might robots be able to use this to their advantage? Are there certain forms of humor that are unique to robots?

Coordination

Many tasks will require coordination between people and robots. Some of these tasks may involve direct coordination and experts with domain knowledge (e.g., humans and robots collaborating in a welding or soldering task as part of manufacturing and assembly) while others may involve indirect coordination and novices with little knowledge of robotics (e.g., a pedestrian trying to cross a street in front of a driverless car). There are many issues in achieving successful coordination, including trust, mental models, perceptions of intent, predictability, etc. How might we improve human-robot coordination for a certain type of task?



Those are just a handful of ideas to get you thinking. Remember that this project pitch is not the final declaration of what you will be doing for the final project, that will be decided on a team by team basis. At the end of the day the goal is to come up with interesting project ideas, work on your communication skills, and to have fun.