Presentations & Projects

Due:
- Project: Research question due this Saturday by email
- Sign up to present by Tuesday 2/23
  - http://tiny.cc/hri-signup

Today: presentations and projects
- Presentations
  - What should you do, when?
- Research question
  - Examples and ideas
- A note on class participation
  - Participate in discussions about every paper.

Lit Search

- How many of you have done literature searches?
  - http://citeseerx.ist.psu.edu/index

Papers For Presentation

- Find 5-6 relevant papers you could present that are:
  - Interesting!
  - Central to your topic
    - E.g., “Robot vision” papers must be about vision, not involve cameras
  - Covering different areas or ideas from your topic

  - Mechanically, they must be:
    - Since 2000 and 2012
    - From two different research groups
    - 6-12 pages (or one longer paper)

  - Send these 5-6 to us both 2 weeks in advance
  - We will let you know which to go with.

Expectations

- Expect to talk for 40-50 minutes
  - 20-25 minutes per paper
  - ~30 minutes for class discussion
- Sequential vs. concurrent
  - Paper one, then paper two
  - Interleaved
- Slides should be:
  - Clear; visually interesting; readable
  - Balance interest and professionalism
- Practice your talk

What to Cover

- What is the problem addressed?
- What is the approach they take?
- Did it work?
- Did they choose good experiments / metrics?
- What are their conclusions?
- What do we think of this paper?

  - According to...
    - You (the presenter)
    - Class (the discussion)
    - The author (what you are presenting)
Problem Addressed

- Why is that problem interesting (if it is)?
- What’s the motivation?
  - According to them
  - According to you
  - According to the class

Their Approach

- Technical contribution?
  - This should be a lot of your talk!
  - What motivates that choice?
- Is it a good approach?
  - What do we like about it
  - What are some possible improvements?
  - What else might we apply it to?

Experiments

- Did it work?
  - How did they test it?
  - What experiments did they run?
  - What metrics did they use / how did they measure?
- Did they choose good experiments / metrics
  - Do they test what they think they do?
  - Are they missing an obvious test/metric?
- What are their results?
  - Copy graphs and such into your slides!
  - Are those results impressive? Convincing?

Their Conclusions

- What (do they say) worked and didn’t work?
- What do they think this proved?
  - What do we think?
- Do the results apply to the motivating problem?
  - If not, what would need to change?
  - What are their future work claims?

Overall & Discussion

- What did we like?
- What did we dislike?
- What have we learned?
- How can we apply this to other problems?

Research Question

Write a paragraph about the project as an 'abstract.'

- What is the **goal** of your project?
- What **question** do you hope to answer?
- What is your **hypothesis**?
- How will you try to answer it?
  - What robot(s) are you using?
  - What interaction scenarios (user study)?
  - What research method?
Turn-taking is fundamental to the way humans engage in information exchange, but robots currently lack the turn-taking skills required for natural communication. In order to bring effective turn-taking to robots, we must first understand the underlying processes in the context of what is possible to implement. We describe a data collection experiment with an interaction format inspired by “Simon says,” a turn-taking imitation game that engages the channels of gaze, speech, and motion. We analyze data from 23 human subjects interacting with a humanoid social robot and propose the principle of minimum necessary information (MNI) as a factor in determining the timing of the human response. We also describe the other observed phenomena of channel exclusion, efficiency, and adaptation. We discuss the implications of these principles and propose some ways to incorporate our findings into a computational model of turn-taking.
Possible Projects

- Human-robot dialog
  - What kind of dialog system might be interesting?
  - How would you test it?
- Human-robot collaboration
  - Pick an interesting task that needs two+ agents
  - What component of it can be tried in a semester?
- Assistive robots
  - What do people with disabilities have trouble with?
  - What task could a robot be helpful with?
  - How can you test and improve uptake?

Possible Projects

- Social Learning
- HRI for Robots in Extreme Environments
  - Build a fish?
- Spring Break
- Socially-Assistive robots
  - Navigation around humans
- Remote presence
- Collaborative manipulation, human-robot hand-overs
- Expressive robot motion
- Remote teleoperation
- Educational Robotics