287H: Algorithmic Human-Robot Interaction

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contains policies, tentative schedule, dates, expectations, grading, learning objectives

new area of research?

no book; lecture notes + papers

more problems than solutions

(hopefully you solve some in your research)

61A 188 grad class
this class seminar reading group

50% lectures
50% paper presentations
research project
Content

- Background: how to optimize cost/reward
  - controls (they opt) + Ar (MDP) view
  - including manually defined costs for interaction

- What to optimize - learning cost/reward
  - IRL, imitation, psyche, interfaces

- Collaboration/coordination
  - instinct inference and expression
  - generating behavior to avoid/assist planning/IRL

[Experiment design]

- ATRI frontier: game theoretic view
  - better human modeling

Lectures + papers in robotics, AI, HRI
  - sometimes, ATRI, AHA1
Logistics

check website often for schedule updates

Grading:
- 30% presentations
- 30% final project
- 15% quizzes
- 15% homework (adding more this year)
- 10% participation

Project:

Research project:
- needs both algorithmic and human component/aspect
- physical robot or simulation or virtual AI
- paper - watley idea
- preliminary results ok
- literature survey:
  - 50-70 relevant papers
  - organize the area/topic
    - table w. different axes
    - analyze / explain
    - not a laundry list
Dates:

- **April 1**: proposal (1 page)
  - research: motivate the problem,
  - describe what SOTA is missing,
  - state a clear key insight
- **Survey**: identify topic,
  - describe inclusion criteria
  - 5-10 initial papers
  - preliminary axes/organisation
- **April 26/27**: final presentation
- **May 3**: final report