Topics in HRI: First Meeting

9/27/21

Agenda

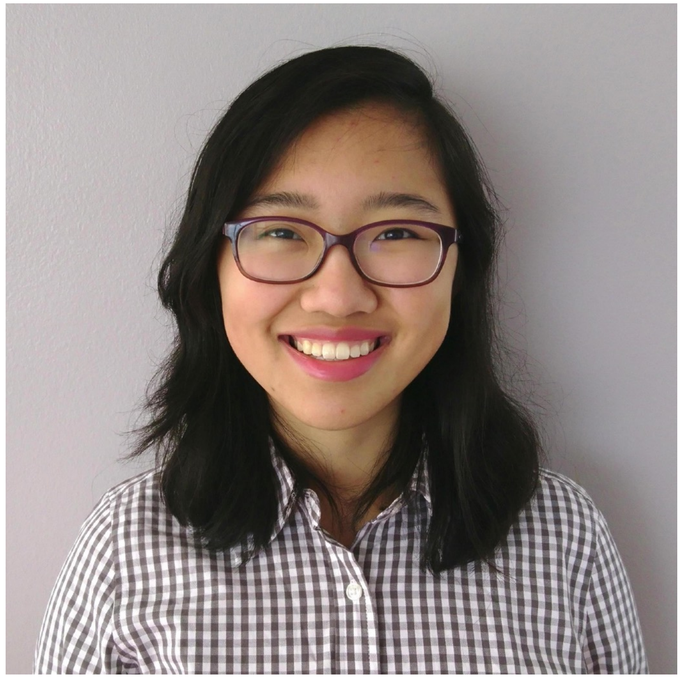
1. Introductions
2. What is human-robot interaction?
3. About this course
4. Expectations
5. First reading assignment
6. Q&A

Introductions

Please share your name, pronouns, and what you hope to accomplish in this course

Teaching Team

Sarah Sebo
she/her/hers
You can call be by my first name

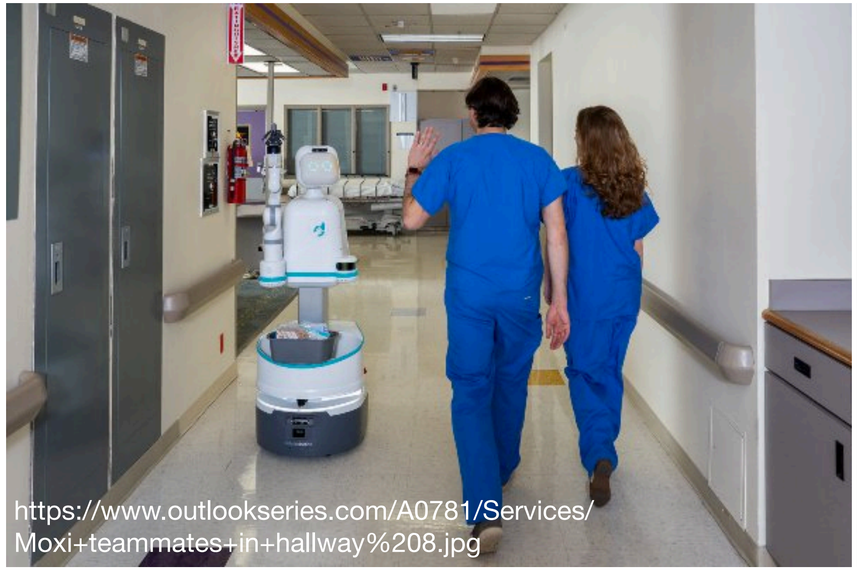


Valerie Zhao
she/her/hers
TA

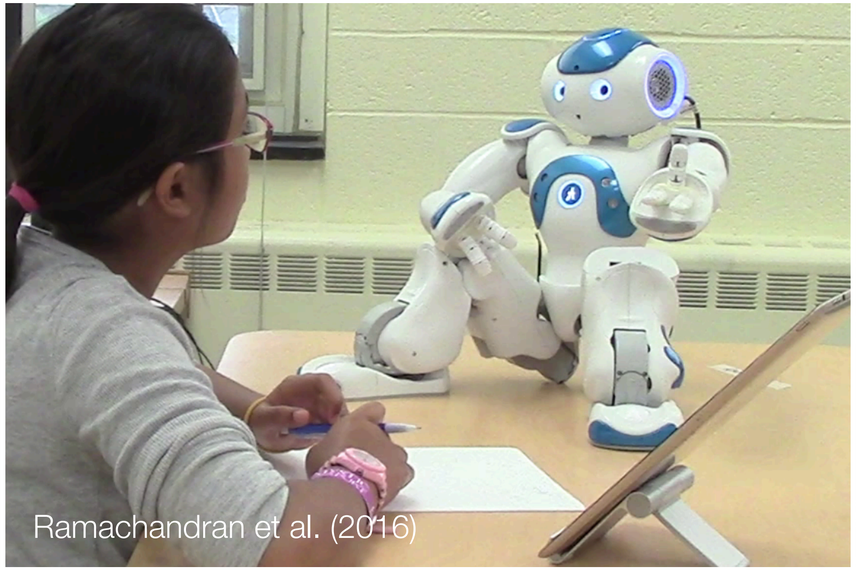
Introductions

Please share your name, pronouns, and what you hope to accomplish in this course

What is human-robot interaction?



healthcare

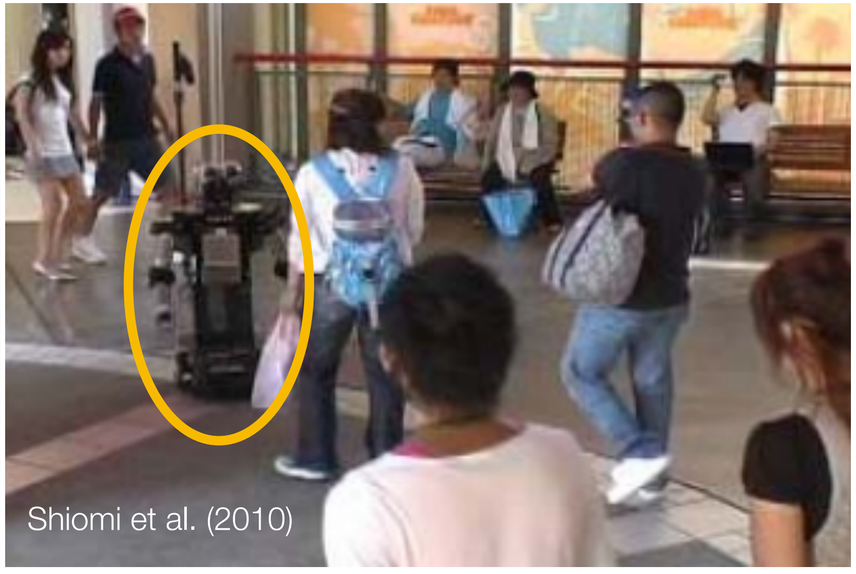


education

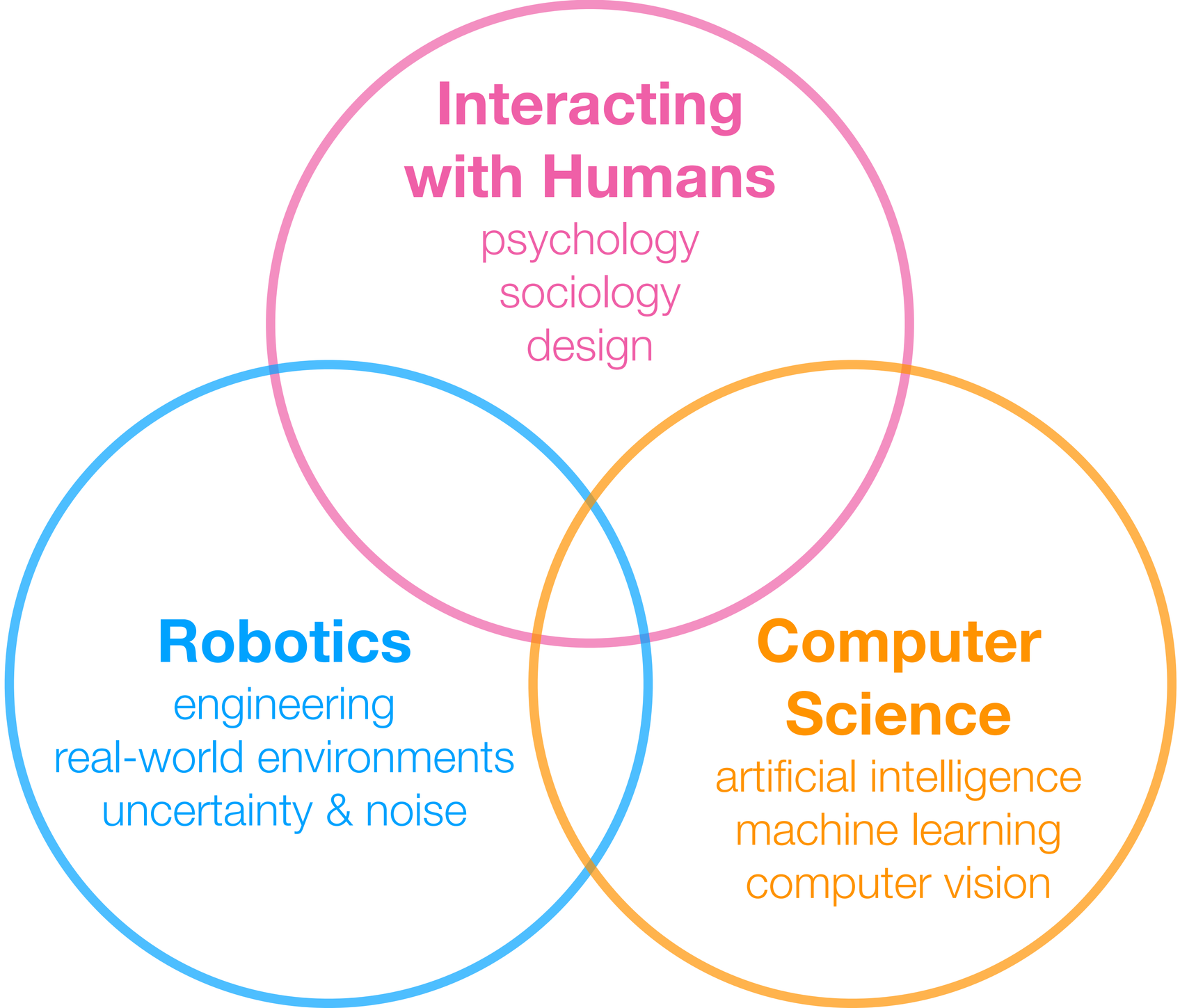
manufacturing

homes & elder care facilities

food delivery



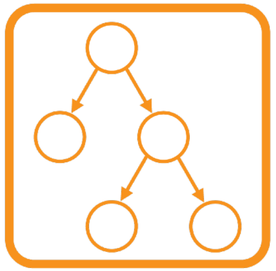
shopping mall assistance


Interacting with Humans
psychology
sociology
design
Robotics
engineering
real-world environments
uncertainty & noise
Computer Science
artificial intelligence
machine learning
computer vision

HRI Research Approach

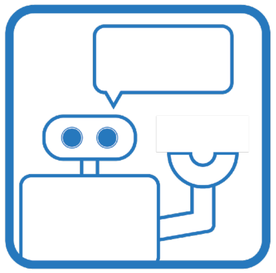
Perception

What part of the task is she currently working on?



Action Selection

What is the best supportive action for me to take?



Evaluation

How effective was my action (task completion, human satisfaction)?

human-subjects studies

Topics

- Nonverbal behavior
- Verbal behavior
- Social dynamics
- Norms/ethics
- Collaboration & learning
- Group interactions
- Applications
- Future Challenges in HRI

About this course

Learning Objectives

- Obtain a broad understanding of and exposure to cutting-edge research in the field of HRI —> *research paper readings & discussions*
- Cultivate analytical and critical thinking skills about HRI research —> *class discussions & analytical comments on the readings*
- Gain hands-on HRI research experience —> *course project*

Class Meetings

- MWF 9:30am - 10:20am CST
- We will be **moving to JCL 346**
- Discussion of a research paper
  - Lead by a class member, or
  - The author(s) of the paper themselves —> Guest Presentation

Class Meetings

Class Discussion

- **All members of the class**
  - read the research paper and make at least 1 analytical comment using hypothes.is before 8:30am CST the day of class
- **The discussion leader**
  - creates ~5 slides meant to be presented in < 5 min giving a summary of the paper, a brief analysis, and discussion questions
  - uploads the slides to Canvas ***24 hours in advance*** of the class where they will be presenting

Class Meetings

Guest Presentations

- Throughout the quarter, we'll have 4 guest presentations (HRI 2021 papers)
- **All members of the class** read the research paper and make: at least 1 analytical comment ***and at least 1 question for the author(s)*** using hypothes.is before 8:30am CST the day of class
- During class time, the author(s) will present their paper, field Q&A, and together we'll discuss the implications of their work

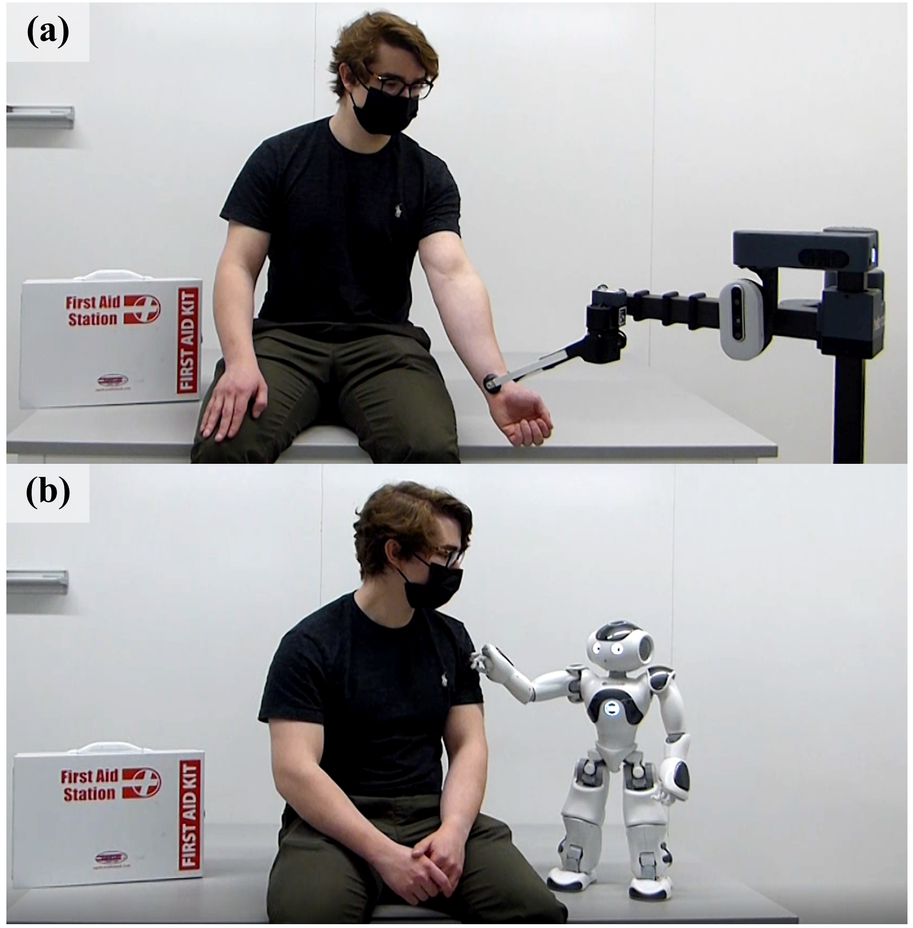
Office Hours

- Sarah: Tuesdays, 3:30-4:30pm JCL 373

Research Project

- Groups of 2-3 students
- The project must involve at least 1 robot and at least 1 person and contribute something new to the field of HRI
- Examples of what you might be able to do for your project:
  - An in-person human-subjects study
  - A human-subjects study conducted on an online platform (AMT)
  - Analysis of a human-robot interaction in a pre-recorded dataset
  - A literature review
- Pitch 1-3 project ideas on Wednesday 10/6

Physical Touch from a Robot Caregiver: Examining Factors that Shape Patient Experience



- Examined:
  - Presence of touch: present, absent
  - Intent of touch: instrumental, affective
  - Robot appearance: Stretch, Nao
  - Robot tone: empathetic, serious
- Recruited + ran participants on Prolific

Physical Touch from a Robot Caregiver: Examining Factors that Shape Patient Experience

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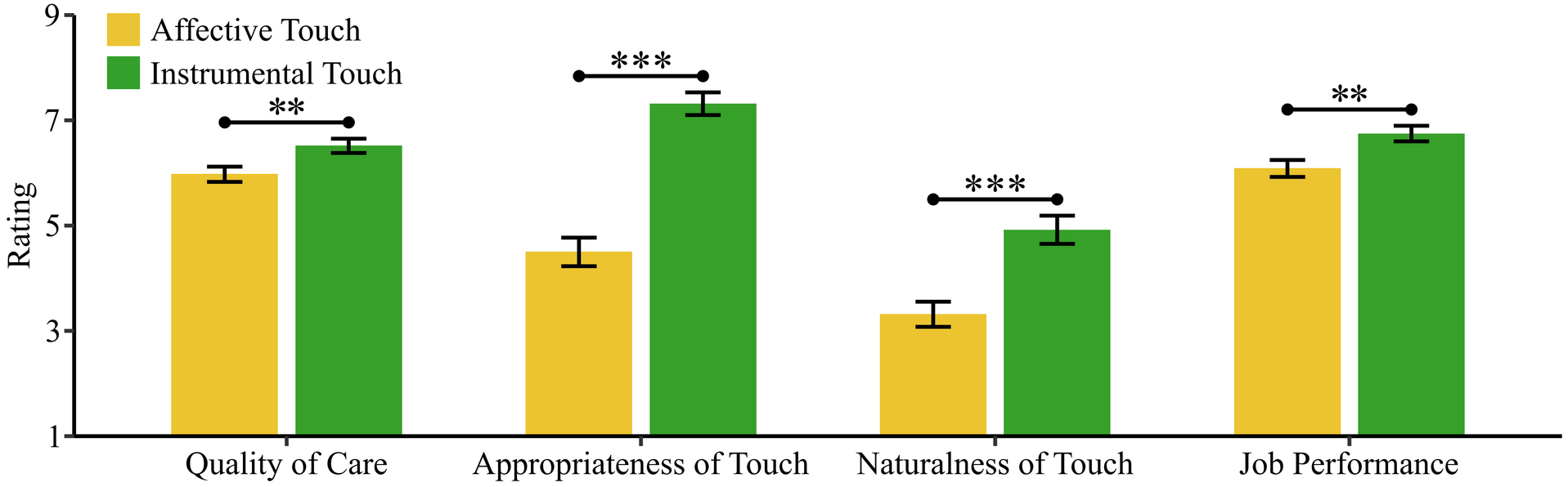
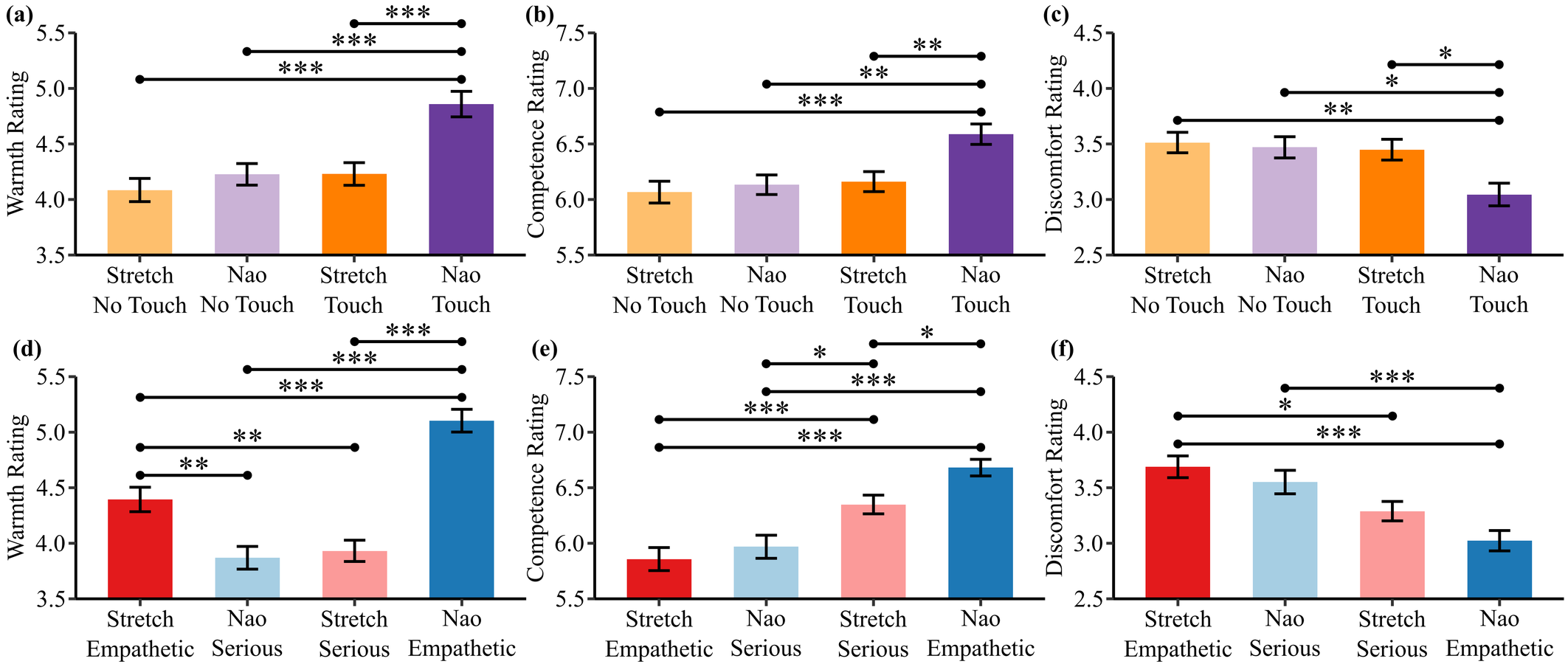


Physical Touch from a Robot Caregiver: Examining Factors that Shape Patient Experience

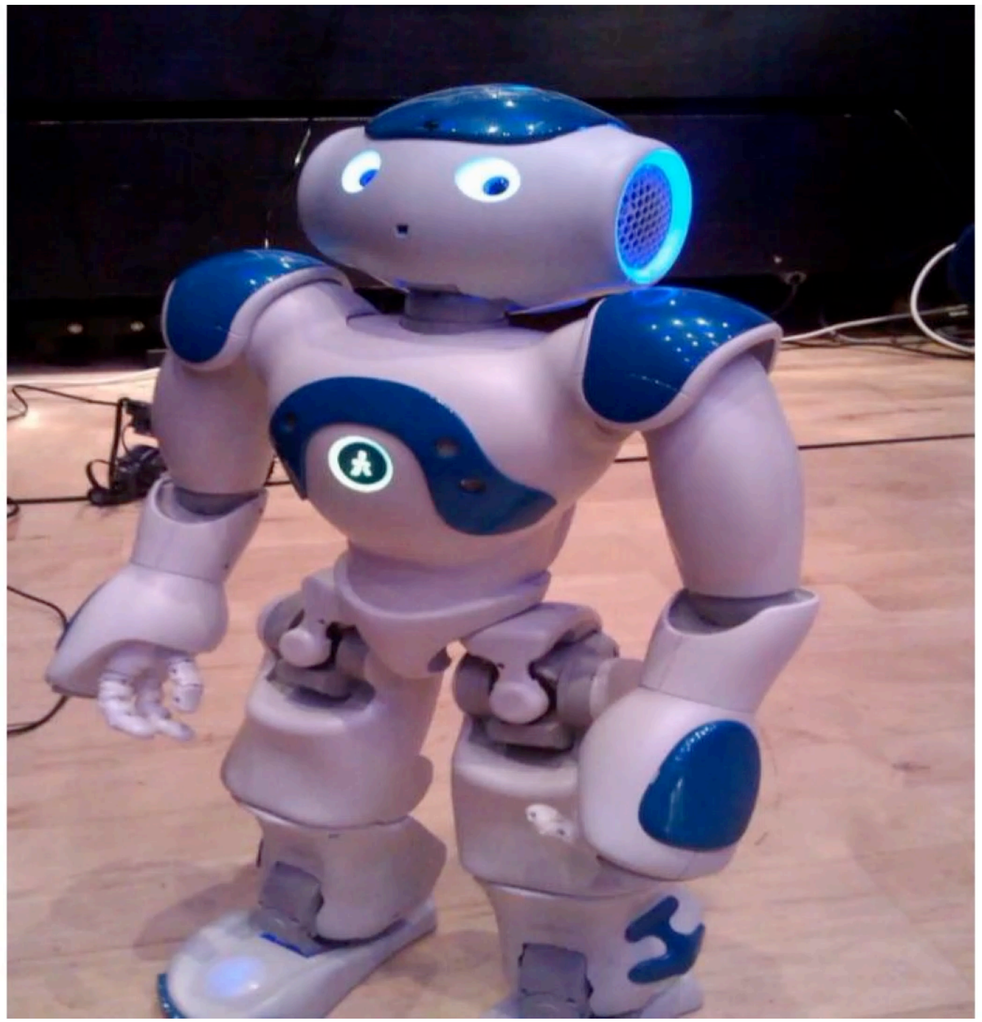


Parental Responses to Aggressive Child Behavior towards Robots, Smart Speakers, and Houseplants

(a) (b) (c)

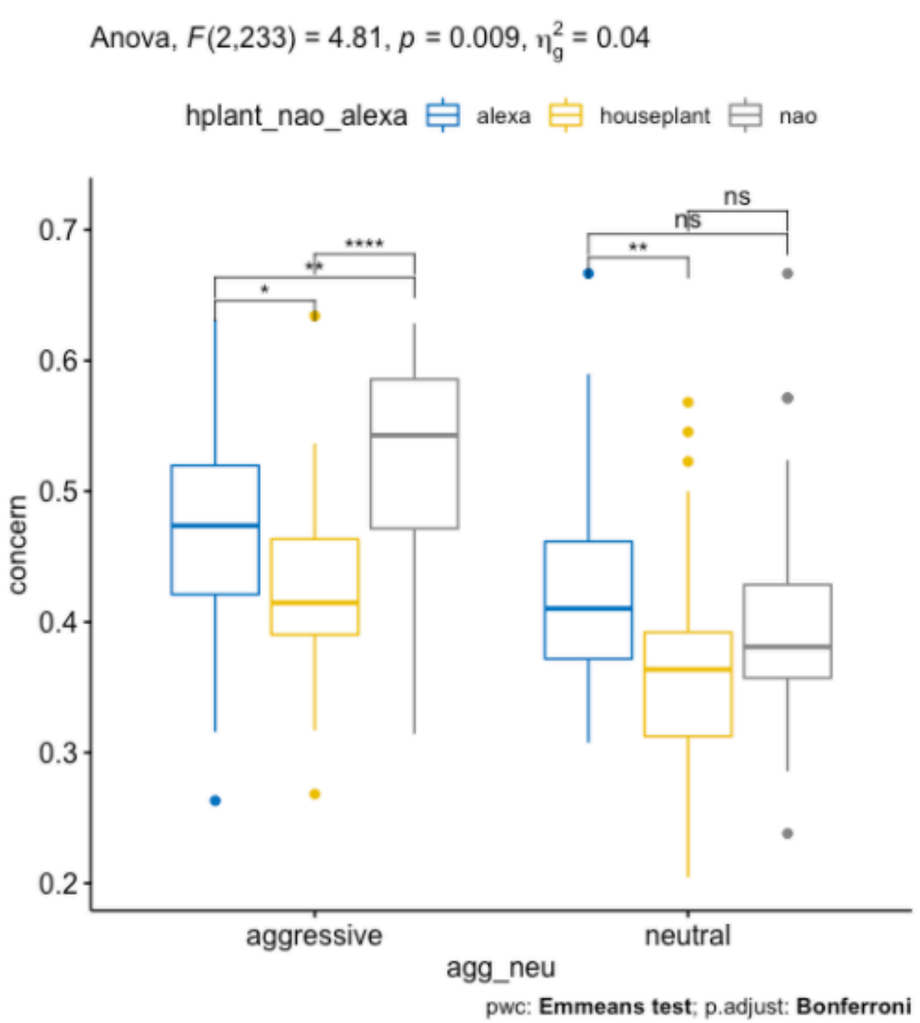
- Interested in how children behave to AI device in the household
- Examined:
  - Presence of aggression: aggressive, neutral
  - Object: robot, smart speaker, houseplant
- Recruited + ran participants on Prolific

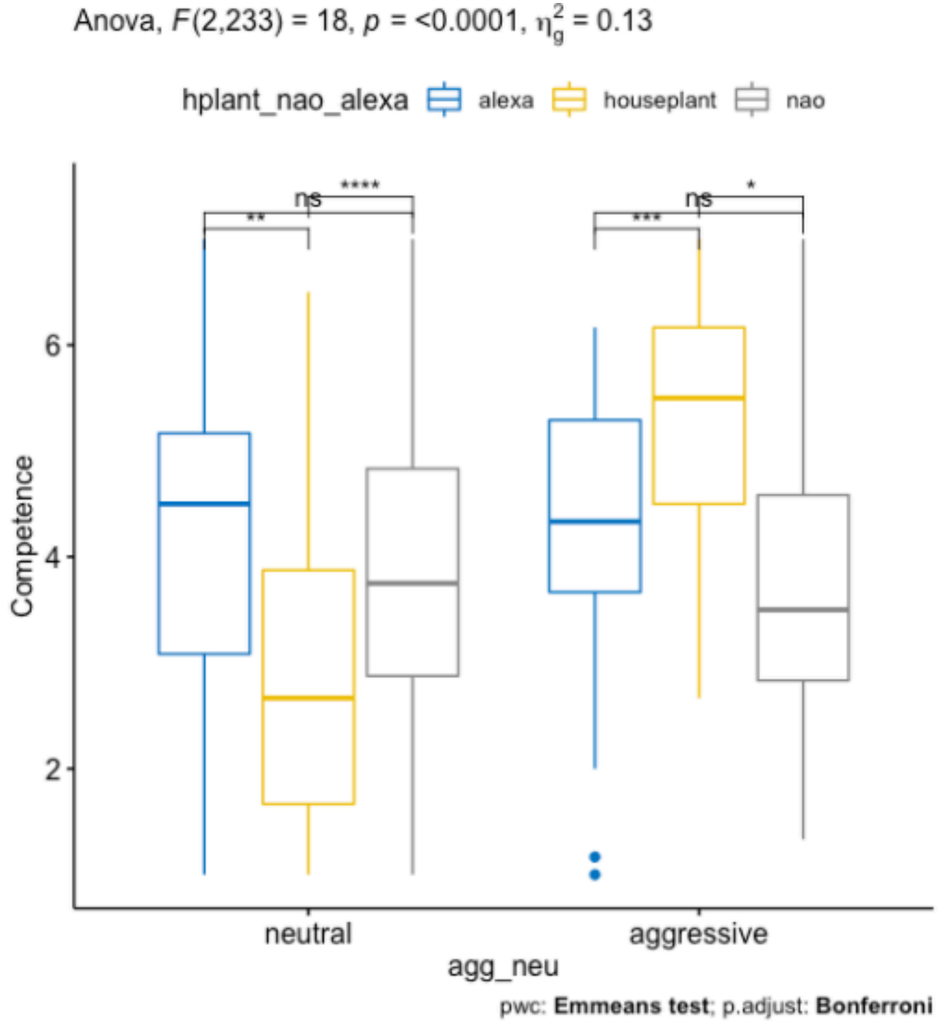
Parental Responses to Aggressive Child Behavior towards Robots, Smart Speakers, and Houseplants



This is a robot named NAO

Parental Responses to Aggressive Child Behavior towards Robots, Smart Speakers, and Houseplants





Grading

- 20% comments on the readings
- 20% discussion leadership
- 50% project
- 10% attendance/participation

Course Tools

- Course website —> *pretty much everything*
- Canvas —> *grades*
- Google Drive —> *project folder, discussion slide uploads*
- hypothes.is —> *comments & discussion on the research papers*

Expectations

Learning in Light of Current Events

- I am committed to being flexible
  - Grading: 3 late analytical comments, 2 missed class discussions
  - Please talk with me if your circumstances require additional flexibility
  - We will continue to adapt and adjust
- I encourage you to:
  - prioritize your health and well being
  - consider that others in the class might be experiencing events differently than you
  - communicate with me so I can best support you and set you up for success

COVID-19 Expectations

- Adherence to all UChicago policies regarding COVID-19
  - Any COVID-19 related public health concerns can be reported to UCAIR
- Mask wearing during class
  - Wear a proper mask (no neck-gaters/bandanas, no masks with circle vent)
  - Wear the mask properly (covering nose + mouth, extending below chin)
  - If you need to take off your mask to drink some water, please leave the class and come back
- Do not come to class if you are feeling unwell

Academic Integrity

- Cite sources appropriately (presentations, project work)
- Plagiarism is a serious offense and will be treated as such

Diversity, Equity, and Inclusion

- My expectation is that this course environment is one where diverse backgrounds and perspectives are valued and included for the benefit of us all, including:
  - gender identity, sexuality, disability, generational status, socioeconomic status, ethnicity, race, religion, national origin, and culture
  - if you need accommodation because of a disability please contact Student Disability Services (SDS) and then talk to me
- I expect all interactions to be conducted with mutual respect, open communication, and non-discrimination
- Sexual misconduct is unacceptable in this class and at UChicago

First Reading Assignment

Bainbridge et al. (2011)

- Author: Wilma Bainbridge, Assistant Professor of Psychology @ UChicago
- Homework: make 1 analy er using hypothes.is
- On Wednesday, I will mo ader on this paper

https://brainbridgelab.uchicago.edu/

Other TODOs:

- Fill out Google survey to determine discussion leadership
- Download hypothes.is plugin
- Start thinking about class project ideas

Q&A