

91.550 Human-Robot Interaction, Fall 2007

Syllabus

Contact Information

Prof. Holly Yanco
Office: Olsen 206
Lab: Olsen 304
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Class Meetings

Thursdays, 4:00 – 6:30, Olsen 404

Office Hours

Wednesdays 10:00 to 12:00
Thursdays 1:00 to 2:00
and by appointment.

Course Description

In this course, we will study the emerging field of human-robot interaction. You will learn how interaction varies based upon the capabilities of the robot, its shape, and the location of the robot with respect to the user. Design principles from the field of human-computer interaction will be used to inform our discussion of how to design for human-robot interaction. The course will also address how to design studies, collect data and analyze the data. Case studies of human-robot interaction in multiple application domains will be utilized throughout the course.

The course will draw upon research papers (both recent and historical) for learning about these topics. Each week, you will read 3-5 research papers each week on a particular topic. These papers will form the basis for class discussion of the topic.

Readings

There is no textbook for the course. Readings will be distributed in hard copy at class and also posted to the course website (if an electronic version exists).

Course Website

<http://www.cs.uml.edu/~holly/91.550>

Course Requirements

Written Discussions of the Readings

Each week, you should turn in a written discussion of each of the papers for that week (about one page per research paper). In this discussion, you should briefly summarize the paper (no more than two or three sentences), then discuss the pros and cons of the paper's approach. You should also list at least three issues that you would like to discuss about the paper; these issues could be in the form of questions, if you'd prefer. These summaries must be original work and should include proper citations if you take any material from other sources.

Assignments/Labs:

There will be assignments distributed every 2-3 weeks.

Projects:

The second half of the term will be spent developing a project, which can either be paper- or robot-based. You'll choose the topic in consultation with me. Project meetings will be held at the end of class on October 25th. Project proposals will be due on November 1st. On the last day of class (December 13th), you'll give a 15-20 minute presentation on your project work and will turn in your project report. More on the project will be discussed in class in early October.

Grading Policy

Written discussions	35%
Class discussion	10%
Assignments (Labs)	15%
Project	40%

Collaboration Policy

You should write your paper discussions, assignments, labs and project on your own. You can discuss these assignments with your classmates, but any work that you turn in must be your own.

Homework Policy

All work must be turned in at the start of class on the date it is due in order to receive credit.

Class Schedule

Date	Topic
Th 9/6	Introduction to Human-Robot Interaction
Th 9/13	Robot Morphologies and Interaction Distance
Th 9/20	Design Principles for HCI
Th 9/27	Situation Awareness
Th 10/4	Autonomy and Trust
Th 10/11	Types of Interaction
Th 10/18	Design Principles for HRI
Th 10/25	Metrics for HRI
Th 11/1	Studies with Human Subjects: IRB, Study design, data collection and analysis
Th 11/8	Human-robot teams
Th 11/15	No class: Monday schedule
Th 11/22	No class: Thanksgiving
Th 11/29	Assistive Technology
Th 12/6	Social Robotics
Th 12/13	Project Presentations