CSCI598A: Robot Intelligence

Tue/Thur 3:30 – 4:45 PM, Spring 2015
Alderson Hall 340

Instructor: Dr. Hao Zhang
Outline

• Overview syllabus and class policies
• Taking Snapshots
• Introduction to class
Overview of Syllabus and Class Policies

(See handout)
Time for Snapshots: Smile!!!

• Purpose: Help the instructor to remember all of you.

• Procedures:
  1. Write down your preferred name on a write paper
  2. Take a snapshot with your name card
  3. Take a snapshot without your name card
Advanced Real Robots
What is a Robot?

What image comes into your mind when you think of a robot?
Some images of robots
What is a Robot?

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What is a Robot?

Which of these are required characteristics of a robot?

1. Ability to move – legs, wheels, fly, burrow, swim, orbit
2. Ability to sense – eyes, ears, other inputs
3. Ability to manipulate – arms, hands, fingers
4. Ability to mimic – appearance, human tasks
5. Ability to communicate – expressions, sounds, voice, digital, analog
6. Ability to think – brain, mechanical mechanism, computer
7. Ability to operate – remotely, program control
8. Ability to react and respond to different situations
9. Ability to do something useful

Can a software program be considered a robot?
Is Siri a robot?
There is no widely accepted definition of what a robot is.
What is a Robot?

What image comes into your mind when you think of a robot?

From Wiki:

A robot is an automatic mechanical device often resembling a human or animal.

Modern robots are usually an electro-mechanical machine guided by a computer program or electronic circuitry.
What is a Robot?

• Current common notion of robot:
  ▪ Programmable
  ▪ Mechanically capable
  ▪ Flexible

• Our working definition of robot:

  Physical agent that generates “intelligent” connection between perception and action

  That is, an autonomous system which exists in the physical world, can sense its environment and can act on it to achieve some goals
What is a Robot?

Which of these are required characteristics of a robot?

- **Yes** Ability to move – legs, wheels, fly, burrow, swim, orbit
- **Yes** Ability to sense – eyes, ears, other inputs
- **Yes** Ability to manipulate – arms, hands, fingers
- **Yes** Ability to mimic – appearance, human tasks
- **Yes** Ability to communicate – expressions, sounds, voice, digital, analog
- **Yes** Ability to think – brain, mechanical mechanism, computer
- **Usually** Ability to operate – remotely, program control
- **Usually** Ability to react and respond to different situations environments
- **Usually** Ability to do something useful
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