

# Artificial Intelligence & Computer Ethics

# Artificial Intelligence

# Artificial Intelligence

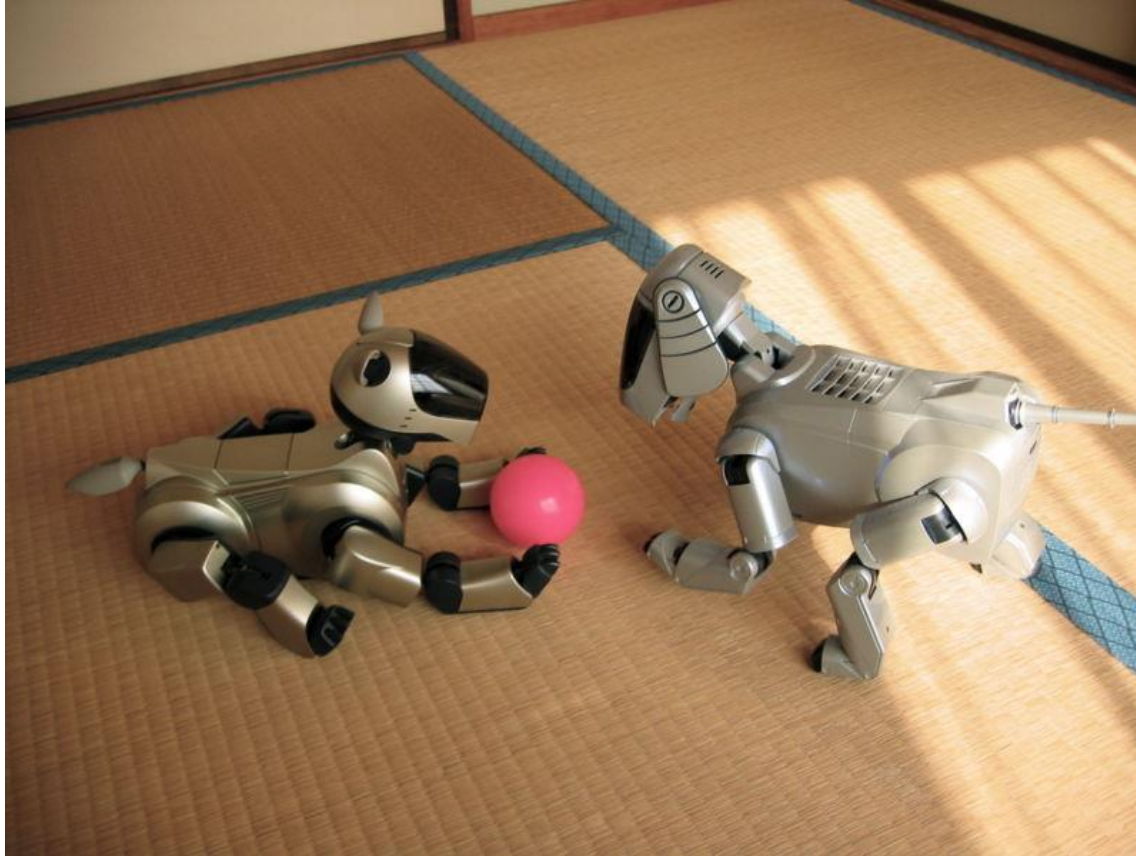
- Branch of computer science that seeks to build machines that can carry out complex task without human intervention.
- Building intelligent systems.
- Getting computers to do tasks which require human intelligence.

# Deep Blue



[http://en.wikipedia.org/wiki/Deep\\_Blue\\_\(chess\\_computer\)](http://en.wikipedia.org/wiki/Deep_Blue_(chess_computer))

# AIBO



<http://en.wikipedia.org/wiki/AIBO>

# DARPA Grand Challenge



[http://en.wikipedia.org/wiki/DARPA\\_Grand\\_Challenge](http://en.wikipedia.org/wiki/DARPA_Grand_Challenge)

# Artificial Intelligence

- Many disciplines contribute to goal of creating/modelling intelligent entities:
  - Computer Science
  - Psychology (human reasoning)
  - Philosophy (nature of belief, rationality, etc.)
  - Linguistics (structure and meaning of language)
  - Human Biology (how brain works)
  - Electrical and Mechanical Engineering
  - Applied Physics

# Agent

- An agent is a device that responds to stimuli from its environment.
  - A Robot
  - An autonomous airplane
  - A character on a video game
- They have **sensors(receive data)** and **actuators(affect their environment)**.



# AI Technologies

- Natural Language Processing
  - Branch of AI that is concerned with processing (understanding, generating, recognizing and translating) natural language using computers.

# AI Technologies

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- Speech Recognition and Synthesis
  - Research area in AI whose goal is to develop machines which can respond to, interpret, and generate spoken words.

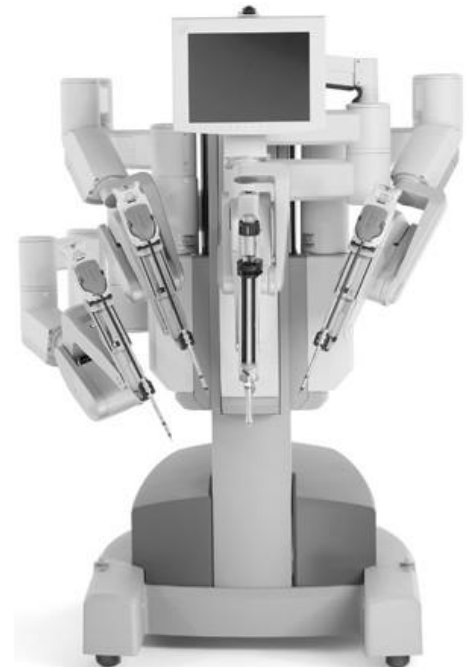
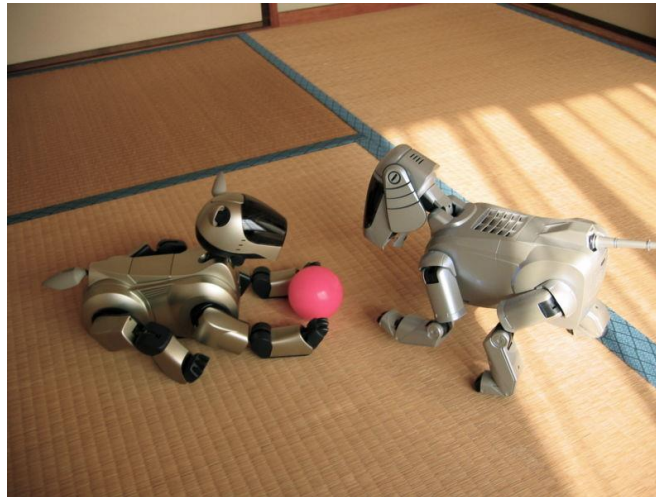
# AI Technologies

- Computer Vision
  - Involves the acquisition and processing of visual information



# AI Technologies

- Robotics
  - Part of AI concerned with Robots
  - It aims to simulate human motor abilities in machines



# Computer Ethics

Computer technology  
is a double-edged sword.

# Social Issues in Computer Science

- Power has potential to:
  - Make routine tasks quick and easy
  - Save lives
  - Explore space and the world
  - Provide faster communication

# Social Issues in Computer Science

- Power has potential problems:
  - Loss of privacy
  - Theft
  - Breakdown of complex systems that we rely on



# Computer Abuse

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- Hacking
- Spam
- Virus
- Trojans
- Worms

# Computer Ethics

- **Ethics** deals with placing a **value** on acts according to whether they are **good** or **bad**.
- As computers became widespread in every facet of our lives, discussions in **computer ethics** resulted in some kind of a consensus.

# The Ten Commandments of computer ethics defined by the Computer Ethics Institute

- Thou shalt not use a computer to harm other people.
- Thou shalt not interfere with other people's computer work.
- Thou shalt not snoop around in other people's files.
- Thou shalt not use a computer to steal.
- Thou shalt not use a computer to bear false witness.

# The Ten Commandments of computer ethics defined by the Computer Ethics Institute

- Thou shalt not use or copy software for which you have not paid.
- Thou shalt not use other people's computer resources without authorization.
- **Thou shalt not appropriate other people's intellectual output.**
- Thou shalt think about the social consequences of the program you write.
- Thou shalt use a computer in ways that show consideration and respect.