Artificial intelligence

Done by:
Tafool
Atsloom

ARTIFICIAL INTELLIGENCE
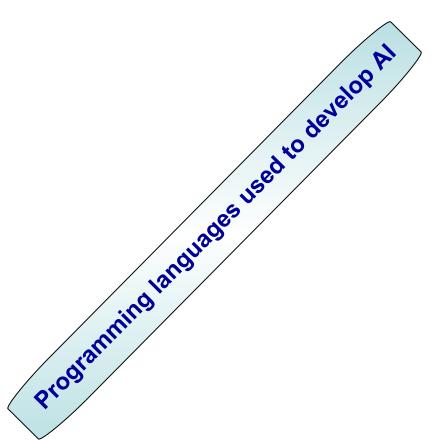
Outline:

Programming languages used to develop AI

History

Definition

Comparisons between human and computer intelligence

Motivation

Limitations

Technology

Advantages

Applications

Artificial intelligence and Learning

History

"machines will be capable, within 20 years, of doing any work a man can do." Two years later, MIT researcher Marvin Minsky predicted, "Within a generation ... the problem of creating 'artificial intelligence' will substantially be solved."

(artificial intelligence innovator Herbert Simon.1965)

Definition

- Artificial intelligence (AI) is the intelligence of machines and the branch of computer science which aims to create it

- Artificial intelligence (AI) is the intelligence of machines and the branch of computer science which aims to create it

Comparisons between human and computer intelligence

Normal humans have the same intellectual mechanisms and that differences in intelligence are related to ``quantitative biochemical and physiological conditions' , but computer programs have plenty of speed and memory but their abilities correspond to the intellectual mechanisms that program designers understand well enough to put in programs.

Whenever people do better than computers on some task or computers use a lot of computation to do as well as people, this demonstrates that the program designers lack understanding of the intellectual mechanisms required to do the task efficiently.

Motivation

Why Artificial Intelligence?

- Computers are fundamentally well suited to performing mechanical computations, using fixed programmed rules.

- Artificial machines perform simple monotonous tasks efficiently and reliably, which humans are ill-suited to.

- For more complex problems, things get more difficult... Unlike humans, computers have trouble understanding specific situations, and adapting to new situations.

- Artificial Intelligence aims to improve machine behavior in tackling such complex tasks.

Cont, Motivation

- Humans have an interesting approach to problem-solving, based on abstract thought, high-level deliberative reasoning and pattern recognition.

- AI research is allowing us to understand our intelligent behavior.

- Artificial Intelligence can help us understand this process by recreating it, then potentially enabling us to enhance it beyond our current capabilities.

Limitations

- **When will Computers become truly intelligent?**

- **T**o date, all the traits of human intelligence have not been captured and applied together to spawn an intelligent artificial creature.

- Currently, Artificial Intelligence rather seems to focus on lucrative domain specific applications, which do not necessarily require the full extent of AI capabilities.

- **T**here is little doubt among the community that artificial machines will be capable of intelligent thought in the near future.

Technology

- How does Artificial Intelligence work?

- There are many different approaches to Artificial Intelligence. Some are obviously more suited than others in some cases.

- Over the past five decades, AI research has mostly been focusing on solving specific problems. Numerous solutions have been devised and improved to do so efficiently and reliably.

- This explains why the field of Artificial Intelligence is split into many branches, ranging from Pattern Recognition to Artificial Life, including Evolutionary Computation and Planning.

Advantage

- it can help improve our way of life

- machines will be able to do jobs that require detailed instructions

- mental alertness and decision making capabilities

- use robots for heavy construction, military benefits, or even for personal assistance at private homes

- there will be less injuries and stress to human beings

- Many of our health problems now have possible solutions with the use of Artificial Intelligence in studies at universities

Cont, Advantage

- scientists have been using AI to test theories and notions about how our brains work

- AI opens up new and exciting avenues for entertainment possibilities.

- AI also makes interactive electronic games more fun by making the computer controlled characters more realistic and human-like.

Applications

- game playing

There is some AI in them and they play well against people

- speech recognition

instruct some computers using speech

- understanding natural language

The computer has to be provided with a understanding of the domain the text is about, and this is presently possible only for very limited domains.

cont, Applications

- expert systems

One of the first expert systems was MYCIN in 1974, which diagnosed bacterial infections of the blood and suggested treatments. It did better than medical students or practicing doctors, provided its limitations were observed.The usefulness of current expert systems depends on their users having common sense

- Modeling Human Performance
- Planning & Robotics
- Languages & Environments for AI
- Machine Learning
- AI & Philosophy

programming languages used to develop AI

- Lisp

- Python

- Prolog

- Java

- C++

Artificial intelligence and Learning

Using Artificial intelligence (AI) help instructional designers to provide creative solutions , problem solving strategies and more interactivity in the learning .

For example , Games :
The games provide interactive learning environment for learners .The intelligence is necessary in computer games when players are competing against other characters which are played by the computer. Most people enjoy playing against other people rather than a machine because other people can provide variable, random and sometimes unpredictable responses and behaviors, whereas simply programmed machines will always respond the same way, in predictable ways that mean a player only has to remember the few basic responses possible, and respond to them in order to complete the level

Reference:

- ref:
- http://machineslikeus.com/news/whatever-happened-artificial-intelligence
- http://en.wikipedia.org/wiki/Artificial_intelligence
- http://www.6moo7.com/VB/showthread.php?t=18346