

Comp ch. 11



**ASSIGN
BUSTER**

conventional AI uses programming that emphasizes statistical analysis to calculate the probability of various outcomes in order to find the best solution

heuristics used to assist software in reaching conclusions and making recommendations

case-based reasoning AI software maintains a library of problem cases and solutions (relies on retrieve, reuse, revise, retain)

Bayesian network form of conventional AI that uses a graphical model to represent a set of variables and their relationships & dependencies

behavior-based AI form of conventional AI that is popular in programming robots.. it stimulates intelligence by combining many semi-autonomous modules

expert systems (ES) programmed to function like a human expert in a particular field

computational intelligence creates software that can learn for itself

fuzzy logic reasoning that is approximate rather than precise

fuzzy control system based on fuzzy logic and used to control machines

evolutionary computation derives intelligence by attempting many solutions and throwing away ones that don't work

genetic algorithm form of evolutionary computation that is used to solve large, complex problems where a number of algorithms or models change and evolve until the best one emerges

neural network popular form of computational AI that attempts to simulate the functioning of a human brain (programmed to accomplish task through repetition)

turing test (Alan Turing) method of determining if a machine exhibits human intelligence (a human talks to a human and machine, if it can't tell which is which, it passes the test)

singularity point in time that computers exceed humans in intelligence

Blue Brain project attempt to simulate a human brain at a molecular level in software running on one of the world's fastest super computers, IBM's Blue Gene (worked on a mouse)

strong AI machine w/ intelligence that exceeds human intelligence

robotics developing mechanical or computer devices to perform tasks that require a high degree of precision or are tedious or hazardous for humans

dull, dirty, dangerous businesses use robots for ____, ____, ____ jobs

DARPA Grand Challenge offers \$2 million for robot that can cross desert on its own

computer vision combines hardware & AI software that permit computers to capture, store, and interpret visual images & pictures (kinect)

natural language processing uses AI techniques to enable computers to generate and understand natural human languages, such as English

speech recognition enables a computer to understand and react to spoken statements and commands

Dragon NaturallySpeaking this is popular and allows users to dictate text as they would naturally speak

pattern recognition speech, handwriting, and face recognition

handwriting recognition uses AI techniques in software that can translate handwritten characters or words into computer-readable data

intelligent agent (digital assistant) consists of programs and a knowledge base used to perform a specific task for a person, process, or another program (Siri)

SitePal greets visitors as they open a website

artificial creativity branch of AI that works to program computers to express themselves through art, music, poetry, and other outlets

CRCA facilitate the invention of new art forms that arise out of the developments of digital technologies

AARON independently paints large, impressive works of art with a paintbrush and canvas

Cybernetic Poet reads poems by people and creates its own just like it

improviser writes songs

evolutionary in artificial intelligence, _____ computation is based on a genetic algorithm to solve complex problems

authentication Facial recognition is used as a(n) _____ process to tag photos in Facebook.

machine learning one important characteristic of artificial intelligence is when a device modifies its own behavior based on its ability to learn, also known as _____.

ability to apply judgement to a problem AI systems typically include all of the following EXCEPT _____.

Moore's Law singularity embraces the idea of _____ and other recent trends in technology.

neural networks All of the following are AI methodologies that rely on a human to give instructions for problem solving EXCEPT _____.

superintelligent the concept of singularity predicts that computers will be _____.

experts a(n) _____ system is software that is knowledgeable in a particular field or area.

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