**What is AI?**

Artificial intelligence (AI) would be the possession of intelligence, or the exercise of thought, by machines such as computers. The goal of artificial intelligence is to make the machines think and hopefully make them as capable of thinking as human beings.

**AI Perspectives: Thinking and acting humanely and rationally**

|  |  |  |
| --- | --- | --- |
|  | Humanly | Rationally |
| Thinking | Systems should solve problems the same way humans do. | Need to worry about modelling uncertainty and dealing with complexity. |
| Acting | The Turing test, proposed by Alan Turing (1950), was designed as a thought experiment that would sidestep the  philosophical vagueness of the question “Can a machine think?” | the study of rational agents: agents that maximize the expected value of their performance measure given what they currently know |

**History of AI**

**1956** - John McCarthy coined the term ‘artificial intelligence’ and had the first AI conference.

**1969** - Shakey was the first general-purpose mobile robot built. It is now able to do things with a purpose vs. just a list of instructions.

**1997** - Supercomputer ‘[Deep Blue](http://mashable.com/2016/02/10/kasparov-deep-blue/)’ was designed, and it defeated the world champion chess player in a match. It was a massive milestone by IBM to create this large computer.

**2002** - The first commercially successful robotic vacuum cleaner was created.

**2005 - 2019** - Today, we have speech recognition, robotic process automation (RPA), a dancing robot, smart homes, and other innovations make their debut.

**2020** - Baidu releases the LinearFold AI algorithm to medical and scientific and medical teams developing a vaccine during the early stages of the SARS-CoV-2 (COVID-19) pandemic. The algorithm can predict the RNA sequence of the virus in only 27 seconds, which is 120 times faster than other methods.

**Influences**

Philosophy considers the nature of knowledge, thought, and learning

Mathematics considers the notions of formal logic, algorithms, computational complexity, and probability

Economics studies how agents attempt to maximize their own well-being, even when given uncertain information and in the presence of allies and adversaries

Neuroscience studies the workings of the human brain

Psychology studies how humans and animals think and act (process information)

Linguistics deals with language in a formal-enough way that it can be processed by machine

Computer Engineering looks to increase the efficiency of computing devices

Control Theory and Cybernetics consider how autonomous machines can operate

**Application**

* Game playing (Chess, Go, Risk, Bridge, Checkers, ...)
* Systems that read handwritten addresses to speed mail sorting
* Search Engines
* Theorem Proving
* Cars (stability traction, braking assist, driving, ...)
* Aircraft autolanders
* Medical Diagnosis
* Expert Systems
* Information Retrieval Systems
* Story writers, poetry writers, ...
* Music Composition
* Annoying auto-correct agents in word processors
* Crisis management
* Space Exploration
* Finance
* Retailing
* Manufacturing
* Inventory Control
* Pharmaceutical Research
* Genetic Research
* (Micro)Surgery
* Insurance Underwriting
* Environmental Monitoring
* Protein Structure Determination
* Scheduling Systems
* Assisted Living Support
* Dispensing Legal Advice
* Essay Evaluation
* Detection of Steganography
* Cryptanalysis
* Translation
* Military Planning
* Surveillance
* Traffic Control