# Artificial Intelligence

**Milessa Jong**
**Royal Melbourne Institute of Technology Melbourne, Australia**
Milesa.jong13982@gmail.com

**Abstract:**

The branch of computer science concerned with making computers behave like humans. The term was coined in 1956 by John McCarthy at the Massachusetts Institute of Technology. Artificial intelligence includes

- **games playing:** programming computers to play games such as chess and checkers
- **expert systems :** programming computers to make decisions in real-life situations (for example, some expert systems help doctors diagnose diseases based on symptoms)
- **natural language :** programming computers to understand natural human languages
- **neural networks :** Systems that simulate intelligence by attempting to reproduce the types of physical connections that occur in animal brains.

Keywords: Natural-language processing, programming languages.

## I. Introduction:

Natural-language processing offers the greatest potential rewards because it would allow people to interact with computers without needing any specialized knowledge. You could simply walk up to a computer and talk to it. Unfortunately, programming computers to understand natural languages has proved to be more difficult than originally thought. Some rudimentary translation systems that translate from one human language to another are in existence, but they are not nearly as good as human translators. There are also voice recognition systems that can convert spoken sounds into written words, but they do not understand what they are writing; they simply take dictation. Even these systems are quite limited -- you must speak slowly and distinctly

AI or artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems. These processes include learning (the acquisition of information and rules for using the information), reasoning (using the rules to reach approximate or definite conclusions), and self-correction. Particular applications of AI include expert systems, speech recognition, and machine vision.

## II. Tools:

- **Search and optimization:**

A very different kind of search came to prominence in the 1990s, based on the mathematical theory of optimization. For many problems, it is possible to begin the search with some form of a guess and then refine the guess incrementally until no more refinements can be made. These algorithms can be visualized as blind hill climbing: we begin the search at a random point on the landscape, and then, by jumps or steps, we keep moving our guess uphill, until we reach the top. Other optimization algorithms are simulated annealing, beam search and random optimization.

- **Logic:**

These tools include models such as Markov decision processes,dynamic decision networks, game theory and mechanism design.

## III. Applications of artificial intelligence:

- **Finance**
- **Hospitals and medicine**
- **Heavy industry**
- **Online and telephone customer service**
- **Transportation**
- **Telecommunications**

- **Toys and games**
- **Music**
- **Aviation**
- **News, Publishing & Writing**

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