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ARTIFICIAL INTELEGENCE (AI)

Artificial intelligence is the art of making machines that are able to ‘think’. We often don’t notice it, but artificial intelligence is all around us. It is present in computer games, in the cruise control in our cars and the servers that direct our e-mail.

The person who finally coined the term artificial intelligence and is regarded as the father of AI is John McCarthy. In 1956 he organised a conference “The Dartmouth summer research project on artificial intelligence” to draw the talent and expertise of others interested in machine intelligence for a month of brainstorming. In the following years AI research centres began forming at the Carnegie Mellon University as well as the Massachusetts Institute of Technology (MIT) and new challenges were faced:

1. the creation of systems that could efficiently solve problems by limiting the search

2. the construction of systems that could learn by themselves.

One of the results of the intensified research in AI was a novel program called The General Problem Solver, developed by Newell and Simon in 1957 (the same people who had created The Logic Theorist). It was an extension of Wiener's feedback principle and capable of solving a greater extent of common sense problems. While more programs were developed a major breakthrough in AI history was the creation of the LISP (LISt Processing) language by John McCarthy in 1958. It was soon adopted by many AI researches and is still in use today.

Machine learning is a method of data analysis that automates analytical model building. It is a branch of artificial intelligence based on the idea that systems can learn from data, identify patterns and make decisions with minimal human intervention. Because of new computing technologies, machine learning today is not like machine learning of the past. It was born from pattern recognition and the theory that computers can learn without being programmed to perform specific tasks; researchers interested in artificial intelligence wanted to see if computers could learn from data. The iterative aspect of machine learning is important because as models are exposed to new data, they are able to independently adapt. They learn from previous computations to produce reliable, repeatable decisions and results. It's a science that's not new – but one that has gained fresh momentum. While many machine learning algorithms have been around for a long time, the ability to automatically apply complex mathematical calculations to big data– over and over, faster and faster – is a recent development. Here are a few widely publicized examples of machine learning applications you may be familiar with:

1. The heavily hyped, self-driving Google car? The essence of machine learning.

2. Online recommendation offers such as those from Amazon and Netflix? Machine learning applications for everyday life.

3. Knowing what customers are saying about you on Twitter? Machine learning combined with linguistic rule creation.

4. Fraud detection? One of the more obvious, important uses in our world today.

Requires to create good AI learning system:

1. Data preparation capabilities;
2. Algorithms – basic and advanced;
3. Automation and iterative processes;
4. Scalability;
5. Ensemble modeling.