Artificial Intelligence: Types, Branches And Applications In Real World

Artificial intelligence is a part of computer science that focuses on creating intelligent machines and intelligent computer programs that can function as human beings. There are three types of learning in artificial intelligence which are Weak artificial intelligence, Strong artificial intelligence, and superintelligence.

Weak intelligence is also called Artificial Narrow Intelligence (ANI). ANI is a phase in which machines can only perform a small set of predefined functions and the machine doesn't have any thinking ability. The following are examples of ANI: Alexa, Self-driving cars, Siri, google translate, etc.

Artificial narrow intelligence or weak intelligence is a phase in which the machine cannot think for itself but rather can perform some set functions, e.g. include Self-driving cars, Google translate, Alexa, and Siri.

Similarly, Artificial General Intelligence(AGI) or strong artificial intelligence, who can help in different languages, such as générateur de texte, is a phase in which the machine can think for itself and make human-like decisions. It is better than ANI since it has the ability to learn and improve as it performs tasks. One of the most famous AGI is AlphaGo. AlphaGo is the first-ever computer program to defeat a Go world champion. Even though there is research being done to achieve AGI, many scientists believe that obtaining is not going to be possible any time soon.

Finally, Artificial Super Intelligence(ASI) or superintelligence is a phase in which the machine has capabilities that surpass human capabilities. ASI is still not possible, it is just a scenario shown in movies such as Big Hero 6 or described in fictional books such as the rise of robots by Martin Ford.

Based on their functionalities artificial intelligence systems are branched out into four different types of artificial intelligence systems. The categories are Reactive Machine AI, Limited Memory AI, Theory of Mind AI, and lastly Self-Aware AI.

Reactive Machine AI contains machines that can perform a small range of predefined functions. Reactive Machines are one of the basic forms of AI, as it doesn't have any past memory it cannot use past information for the future.

Limited Memory AI can provide information and make decisions by going through the past data from its memory. This AI has a temporary memory in order to store past information to make a decision in the near future, for example, Self-driving cars.

The category of Theory of Mind AI is a much more advanced artificial intelligence type since its main focus is human emotions, thoughts, and expectations.

Self-Aware AI, it's a type of artificial intelligence that doesn't exist yet nevertheless it's a category in which machines have self-awareness and consciousness.

Furthermore, there are many branches of artificial intelligence that can be used to resolve real-world problems such as Machine learning, Deep learning, Natural Language Processing, Robotics, Expert Systems, and Fuzzy logic.

We can use machines to solve real-world problems using Machine learning, where they are used to interpret; process and analyze data. It’s a method in which the final goal is defined and the actions to achieve the goal are learned by the machine from experience. Machine learning has three categories which are following Supervised learning, Unsupervised Learning, and Reinforced learning.

One of the advanced fields of Machine learning is Deep learning, they are also used to solve real-world problems. It has unsupervised learning from unstructured data. Deep learning is used in self-driving cars, Siri, face recognition, etc.

Natural Language Processing can also be defined by automatic manipulation of natural languages which can be either text or speech, it is used in Twitter and Amazon.

Artificial intelligence has further branches like robotics, wherein the focus lies on various branches and applications of robots. For instance, artificial agents like AI robots, work in the real world by taking appropriate actions and producing reasonable results.

A type of artificial intelligence-based computer system is an expert system, that mimics a human expert by learning and making appropriate decisions. They use the if-then notation to solve problems, and are mostly used in virus detection, medical facilities; loan analysis, etc.

Medical fields use Fuzzy logic to solve complicated problems that include decision making. Fuzzy logic is based on the principles of degrees of truth rather than it being based on normal computer logic for example Boolean.

One of the fields that artificial intelligence is advancing in is bioinformatics. The management of biological information through the application of computer technology is called bioinformatics. Bioinformatics is a multi-disciplinary research field that merges biology, computer science, mathematics, and statistics. The future of bioinformatics lays in large-scale analysis driven by computational intelligence that will help in saving time, effort and money and accelerate biological discoveries. Some of the few fields that bioinformatics is used in are the following: Microbial genome applications, Molecular medicine, Climate change studies, Waste cleanup biotechnology.

One of the main reasons why artificial intelligence has gained attention in bioinformatics research and computational molecular biology is because artificial intelligence algorithm is being used to keep records, choose a particular method for analyzing data, and helping interpret large amounts of data quickly by using computers. One of the many examples is DNA sequencing with artificial intelligence.

I personally think that artificial intelligence can be used to in so many ways that can benefit humans in a lot of ways, even though we have come so far with artificial intelligence, there is still a lot that needs to be done to improve what we already have. The idea of using artificial intelligence in hospitals to help figure out what is wrong with the patient or using artificial intelligence in schools to help kids with learning from a young age seems farfetched but its

already happening in so many different parts of this world.