Artificial Intelligence (AI) And Machine Learning.

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Abstraction – Artificial intelligence (AI) technology is a Future of Computer technology. Artificial intelligence (AI) is a topic that has been discussed in philosophy and science fiction for decades but has rapidly become a reality. AI covers some fascinating areas, from how we design intelligent machines to what our future might look like when these machines are more ubiquitous than humans. In this paper we introduce AI Technology And Machin Learning.

Index Terms – Introduction to AI Technology, Types, what is machine learning, why machine learning big deal, How Has Machine Learning Changed Our Lives

1. What Is Artificial Intelligence?

Artificial intelligence (AI) refers to computer systems capable of performing complex tasks that historically only a human could do, such as reasoning, making decisions, or solving problems. Artificial intelligence involves using computers to do things that traditionally require human intelligence.But what exactly is it? And why are we so excited about it? Today, the term “AI” describes a wide range of technologies that power many of the services and goods we use every day – from apps that recommend tv shows to chatbots that provide customer support in real time. But do all of these really constitute artificial intelligence as most of us envision it? And if not, then why do we use the term so often? Artificial intelligence (AI) is the theory and development of computer systems capable of performing tasks that historically required human intelligence, such as recognizing speech, making decisions, and identifying patterns. AI is an umbrella term that encompasses a wide variety of technologies, including machine learning, deep learning, and natural language processing (NLP).

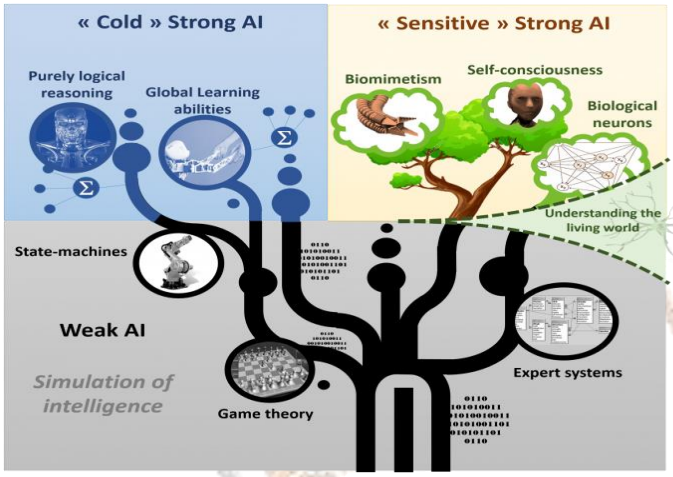
Artificial intelligence is the science of making machines that can think like humans. It can do things that are considered "smart." AI technology can process large amounts of data in ways, unlike humans. The goal for AI is to be able to do things such as recognize patterns, make decisions, and judge like humans. To do this, we need lots of data incorporated into them.

AI technology is at the very foundation of some things, such as image recognition and classification. It's also changing how we make decisions— for example, it can be used to predict traffic light systems or when you get your Tea in the morning.

Today despite the many philosophical disagreements over whether “true” intelligent machines actually exist, when most people use the term AI today, they’re referring to a suite of machine learning-powered technologies, such as Chat GPT or computer vision, that enable machines to perform tasks that previously only humans can do like generating written content, steering a car, or analyzing data.

1.1 Types of Artificial Intelligence

Artificial intelligence can be divided into two different categories: **weak and strong.**



A. Weak artificial intelligence - embodies a system designed to carry out one particular job. Weak AI systems include video games such as the chess example from above and personal assistants such as Amazon's Alexa and Apple's Siri. You ask the assistant a question, and it answers it for you.

KEY TAKEAWAYS

- Weak artificial intelligence (AI)—also called narrow AI—is a type of artificial intelligence that is limited to a specific or narrow area.
- Weak AI can be contrasted to strong AI, a theoretical form of machine intelligence that is equal to human intelligence.
- Weak AI lacks human consciousness, although it may be able to simulate it at times.

Applications for Weak AI

Weak AI helps turn big data into usable information by detecting patterns and making predictions. Examples of weak AI include Meta's (formerly Facebook) newsfeed, Amazon's suggested purchases, and Apple's Siri, the iPhone technology that answers users' spoken questions.

B. Strong artificial intelligence - systems are systems that carry on the tasks considered to be human-like. These tend to be more complex and complicated systems. They are programmed to handle situations in which they may be required to problem solve without having a person intervene. These kinds of systems can be found in applications like self-driving cars or in hospital operating rooms.

Applications of Strong AI

1.**Understand Thoughts and Emotions -** Strong AI utilizes the theory of mind-level AI. In addition to reading human needs and emotions, strong AI could also understand the opinions and thoughts of other living beings.

2. Make Use of Common - The ability to use logic and common sense is an essential human behavior, and technology will need some common sense to match human intellectual capacity.

3. Ability to Reason -Machines with strong AI will be competent to evaluate a scenario and choose an appropriate course of action, even if it deviates from the information the human being has instructed.

4. Easy Adaptability - Machines using strong artificial intelligence will be capable of adjusting to new situations. Weak AI can only behave according to parameters set into algorithms. At the same time, strong AI can make choices on the go.

Comparison of Weak and Strong AI

Weak AI	**Strong AI**
Limited to perform specific tasks	Perform intelligent human level activities
Programmed for fixed function	Have the ability to learn, think and perform new activities like humans
It doesn't have any consciousness or awareness of its own.	It poses creativity, common sense and logic like humans.
They have a goal to complete a task with creative and accurate solutions.	They have a goal to solve problems at a faster pace.
Examples of weak AI include Alexa, Siri and Google Assistant.	There are no real examples of strong AI because it is a hypothetical theory. Some fictional examples are Wall-E and Big Hero 6.

2. What Is Machine Learning?

Machine learning (ML) is a subset of artificial intelligence and is a science of getting computers to learn and act as humans do.In traditional programming, a computer is given input data and an algorithm to produce an output.If a computer is given input data with the corresponding output data, it can learn the algorithm itself and, therefore, continue to predict the right output data. This is called supervised learning. Alternatively, if a computer is given a complex set of input data with no corresponding output data, the machine identifies the relationships in the data to provide valuable insights for decision-makers. This is called unsupervised learning.

2.1 Why Is Machine Learning Such A Big Deal?

Since the advent of machine learning, programming has become easier.Before machine learning became popular, programmers had to write out instructions for each program they wanted their computer to run.If there was a variable that wasn't outlined in these rules and conditions, then the code would stop working altogether- which is why we must use technologies such as machine learning.Machine learning allows us as developers to just give some basic suggestions on how certain things should be done and leave room open for more possibilities so our programs can learn from other data sets too!. Driverless cars are a good example. People don't need to write out instructions for how to deal with every possible thing that could happen involving a pedestrian. Instead, they can teach the car not to hit pedestrians and provide it with millions of pictures of pedestrians walking near roads. This will help the car know what it needs to do when it "sees" something similar in the future.

2.2 How Has Machine Learning Changed Our Lives?

With machine learning, our computers can finally be more intelligent. It's not good by itself, so it needs other things to do that. For example, recommendations are powered by machine learning. This is true for recommendations on Google, Netflix, and Amazon. These same principles also apply to Facebook and Instagram ads. There are now genuinely viable alternatives for completing complex, time-consuming tasks with something other than a human. All business people should recognise this new development and take it into account in their day-to-day work.