What is Artificial Intelligence?

Artificial Intelligence is one of the emerging technologies that try to simulate human reasoning in AI systems. Researchers have made significant strides in weak AI systems, while they have only made a marginal mark in strong AI systems.

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Most of us have used Siri, Google Assistant, Cortana, or even Bixby at some point in our lives. What are they? They are our digital personal assistants. They help us find useful information when we ask for it using our voice; we can say 'Hey Siri, show me the closest fast-food restaurant' or 'Who is the 21st President of the United States?', and the assistant will respond with the relevant information by either going through your phone or searching on the web. This is a simple example of Artificial Intelligence! Let's read more about it!

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What is Artificial Intelligence?

Artificial Intelligence is the ability of a computer program to learn and think.

John McCarthy coined the term Artificial Intelligence in the year 1950.

He said, 'Every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it. An attempt will be made to find how to make machines use language, form abstractions, and concepts, solve kinds of problems now reserved for humans, and improve themselves.'

But, how to make AI think or learn by itself? Let's find that out in the next section:

Interested in learning Artificial Intelligence? Check out the [Artificial Intelligence Training in Sydney!](#)

How does Artificial Intelligence work?

Computers are good at following processes, i.e., sequences of steps to execute a task. If we give a computer steps to execute a task, it should easily be able to complete it. The steps are nothing but algorithms. An algorithm can be as simple as printing two numbers or as difficult as predicting who will win elections in the coming year!

So, how can we accomplish this?

Let's take an example of predicting the weather forecast for 2020.

First of all, what we need is a lot of data! Let's take the data from 2006 to 2019.

Now, we will divide this data in an 80:20 ratio. 80 percent of the data is going to be our labeled data, and the rest 20 percent will be our test data. Thus, we have the output for the entire 100 percent of the data that has been acquired from 2006 to 2019.

What happens once we collect the data? We will feed the labeled data, i.e., 80 percent of train data, into the machine. Here, the algorithm is learning from the data which has been fed into it.

Next, we need to test the algorithm. Here, we feed the test data, i.e., the remaining 20 percent of the data, to the machine. The machine gives us the output. Now, we cross verify the output given by the machine with the

actual output of the data and check for its accuracy. While checking for accuracy if we are not satisfied with the model, we tweak the algorithm to give us the precise output or at least somewhere close to the actual output. Once we are satisfied with the model, we then feed the data to the model so that it can predict the weather forecast for the year 2020.

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With more and more sets of data being fed into the system, the output becomes more and more precise.

Well, none of the algorithms can be 100 percent correct. None of the machines have been able to attain 100 percent efficiency as well. Hence, the output we receive from the machine is never 100 percent correct.

What are the major subfields of Artificial Intelligence?

Artificial Intelligence works with large amounts of data which are first combined with fast, iterative processing and smart algorithms that allow the system to learn from the patterns within the data. This way, the system would be able to deliver accurate or close to accurate outputs. As it sounds, AI is a vast subject, which involves much-advanced and complex processes, and hence its field of study includes many theories, methods, and technologies. The major subfields under AI are explained below:

Machine Learning: Machine Learning is the learning in which a machine can learn by its own from examples and previous experiences. The program developed for it need not be specific and is not static. The machine tends to change or correct its algorithm as and when required.

Artificial Intelligence (AI) and Machine Learning (ML) are the two most commonly misinterpreted terms. Generally, people tend to understand that they are the same, which leads to confusion. ML is a subfield of AI.

However, both terms are recalled simultaneously and repeatedly whenever the topics of Big Data or Data Analytics, or some other related topics, are talked about.

Neural Networks: Artificial Neural Networks (ANNs) were developed getting inspired by the biological neural network, i.e., the brain. ANNs are one of the most important tools in Machine Learning to find patterns within the data, which are far too complex for a human to figure out and teach the machine to recognize.

Deep Learning: In Deep Learning, a large amount of data is analyzed, and here the algorithm would perform the task repeatedly, each time twisting/editing a little to improve the outcome.

Cognitive Computing: The ultimate goal of cognitive computing is to imitate the human thought process in a computer model. How can this be achieved? Using self-learning algorithms, pattern recognition by neural networks, and natural language processing, a computer can mimic the human way of thinking. Here, computerized models are deployed to simulate the human cognition process.

Computer Vision: Computer vision works on allowing computers to see, recognize, and process images, the same way as the human vision does, and then it provides an appropriate output. Computer vision is closely related to Artificial Intelligence. Here, the computer must understand what it sees, and then analyze it, accordingly.

Natural Language Processing: Natural language processing means developing methods that help us communicate with machines using natural human languages like English.

Have you got any queries on AI? Drop your queries and doubts in our Artificial Intelligence and Deep Learning Community and get them clarified!

Now that we understand what Artificial Intelligence is and we are familiar with its subfields, we would consider why it is really in demand in the

current world. To begin with, here is a quote from Forbes:

'Machines and algorithms in the workplace are expected to create 133 million new roles, but cause 75 million jobs to be displaced by 2022 according to a new report from the World Economic Forum (WEF) … This means that the growth of Artificial Intelligence could create 58 million net new jobs in the next few years.'

Interesting, isn't it? If you are looking out for a change in your job, then Artificial Intelligence can be your best bet for your sustainable career growth.

There is a huge demand for AI professionals, right now. Let us look at some of the facts, which will support this argument.

Top 10 Jobs That Require AI Skills

Given below are the roles with job descriptions that have AI, and related technologies, frequently mentioned in them. The table also shows the percentage of jobs available even after 60 days of their opening.

Top Paying AI Jobs

Once we identify which all jobs most frequently require AI skills, we want to know how much corporates pay for each of these profiles. In this way, we would get a sense of how competitive the market is for this vast cutting-edge technology.

Are you planning to step into the world of AI jobs? Go through Intellipaat's Top Artificial Intelligence Interview Questions and Answers and crack all AI-related interviews easily!

What are the applications of Artificial Intelligence?

Now, it is time for us to know various real-life applications of AI across industry vertical.

Every time you make a transaction online/offline, using your credit or debit card, you receive a message from your bank asking if you have made that transaction. The bank also asks you to report if you haven't made the transaction. The bank feeds its Artificial Intelligence system with data regarding both fraudulent and non-fraudulent transactions. The AI system learns from this data and then predicts which transactions are fraudulent and which are not based on this huge training set.

Did you know that Mark Zuckerberg had created Synapse, a music player which suggested songs that users would likely to listen to? Netflix, Spotify, and Pandora also recommend music and movies for users based on their

past interests and purchases. These sites accomplish this by garnering the choices users had made earlier and providing these choices as inputs into the learning algorithm.

The market size of AI software is expected to reach up to $36 million by 2025. This hype in the market has caused retailers to pay attention to Artificial Intelligence. Thus, the majority of big- and small-scale industries are adopting AI tools in novel ways across the entire product life cycle— right from the assembling stage to the post-sale customer–service interactions.

With the AI technology, the pilot only needs to put the system on the autopilot mode and then the majority operations of the flight will be taken care of by AI itself. It is reported by *The New York Times* that only seven minutes of human intervention (which mostly relates takeoff and landing) is required for the average flight of a Boeing plane.

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Conclusion

There is a growing fear that the widespread implementation of AI will erode human jobs. Not just commoners but entrepreneurs like Elon Musk are voicing alerts at the growing pace of researches undertaken in the AI domain. They are also in a view that AI systems may pave a way for large-scale violence in the world. But that is a very myopic way of looking at things!

In recent decades, technology has grown rapidly and massively. During the entire course, for every job lost to technology, there were always fresh and new job roles emerging. If it had been the case where a new technology replaced all human jobs, then, by now, the majority of the world would have gone jobless. Even the Internet during its inception had garnered much negative reviews. But, it is now obvious that the Internet can never be replaced. You wouldn't be reading this blog if that was the case. Similarly, though it automates much of the human capabilities, it will rise up in its potential and goodwill and benefit mankind in general.

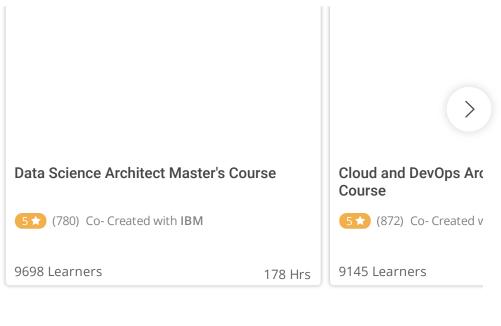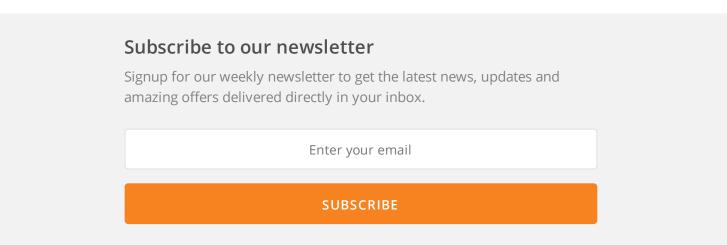**Dive deep into the world of AI through Intellipaat's Artificial Intelligence Course!**

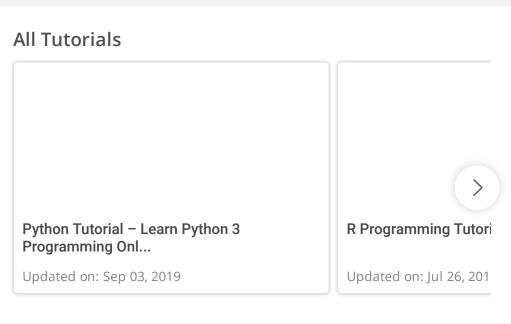Previous   Next

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