**Difference Between Artificial Intelligence and Machine Learning**

The terms Artificial Intelligence and Machine Learning are two popular buzzwords of today and often used interchangeably. Though they have become a part of our daily lives, there is still a lot of confusion between the two and in many marketing campaigns, this distinction is often overlooked for sales and advertising. However, AI and ML are different from each other in their algorithms, approach and logical thinking. In fact, machine learning is a subfield of the much larger field of artificial intelligence.

Before getting into the crux of the topic, let us review our basic understanding of the two.

Artificial Intelligence is the intelligence exhibited by machines, hence given the name “artificial”. It is the study of how to teach machines to acquire knowledge and learning how to apply that knowledge. It aims to teach computers to make [intelligent decisions](http://www.cardzgroup.com/ContactLessSmartCard.html) and attempt doing things which humans can do. On the other hand, machine learning allows computers to gain knowledge and learn through experience to make decisions accordingly.

Let us now look deeper into the two terms to find out how both are different from each other.

**Machine Learning**

Instead of programming instructions into a software program for accomplishing particular tasks, machine learning involves training an algorithm to learn “how” to solve tasks. This training includes feeding large amount of data to the algorithm and allowing it to adjust and improve itself.

As a practical example, let us look at how machine learning has helped make improvements to a computer’s ability to recognize any object in a video or an image. By gathering thousands of pictures of an object, let’s say a dog, and having humans tag them, you train the algorithm to recognize dog pictures by itself. The algorithm is then able to accurately tag a picture containing a dog. With higher accuracy levels, the machine learns how a dog looks like.

**Artificial Intelligence**

While performing tasks according to human intelligence may seem general, AI involves things like understanding language, planning, recognition of sounds and objects, learning and problem solving. AI can be put into two categories i.e. narrow and general. Narrow AI involves only some characteristics of human intelligence which can be performed at the best. General AI includes all characteristics of human intelligence. A machine that is good at recognizing voices, but nothing else, is an example of narrow AI.

Let’s look at a video game scenario where you have to go from one place to another through a minefield. Initially you don’t know which path is the best for avoiding landmines and you carry simulated runs to get data about the optimal path. In machine learning, this data that we get through experience can allow us to train the machine to navigate safely. If the location of land mines is changed, the machine learning will no longer be useful to us as it works on the existing data it has. Artificial Intelligence, on the other hand, will analyze the data to see why the paths are changing and identify the potentially dangerous areas. It will work in a same way as the human brain does by avoiding the dangerous paths.

The following table gives a summary of the basic differences between the two.

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|  | **Artificial Intelligence** | **Machine Learning** |
| 1 | AI aims to increase the chances of success rather than accuracy | ML focuses on accurate results instead of success |
| 2 | It imitates human cognitive behavior | Decision making is based on past experience. It can change algorithm if the dataset is changed. |
| 3 | It solves complex problems by simulating natural intelligence | It learns from already existing data to maximize performance on a given task |
| 4 | It tends to be used in situations where it is important to adapt to new scenarios and can perform various complex tasks. | ML algorithms do not give correct outcome in new scenarios. It can only perform tasks which are familiar. |

**Conclusion**

With all their differences, Artificial Intelligence and Machine learning complement each other. The next major breakthrough lies not only in pushing each of them but in putting them altogether and boost the intelligent behavior of machines. With the help of Big Data, both ML and AI have valuable part to play in business applications of today.