과목명	Data Mining
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과제명	Writing Essay
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1. Understand why artificial intelligence becomes popular

Data Growth

Problem - Traditional and Legacy Storage Designed for Transactional, Not Unstructured Data

Unstructured Data

Structured Data

Unstructured data growth of 60–80% per year creates Web-scale storage needs

*1 exabyte = 1,000 petabytes =1 million terabytes = 1 billion gigabytes   Source:IDC

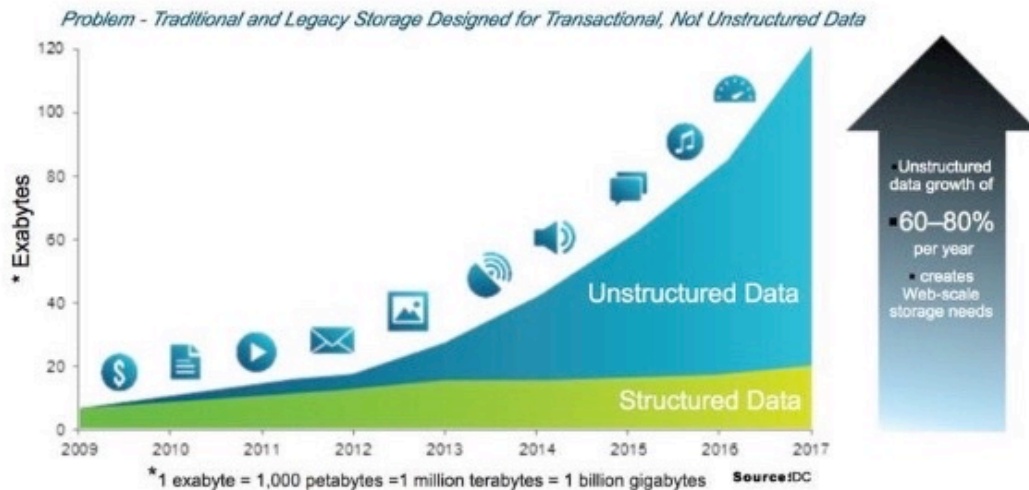사진 출처 : https://www.ibm.com/blogs/ibm-training/when-data-science-met-machine-learning/

Previously, there was a lot of structured data. However, the amount of data has exploded since the Internet/Mobile. Today, unstructured data accounts for more than 80 percent of the data. Therefore, Artificial intelligence has become more important and popular to make good use of this data.

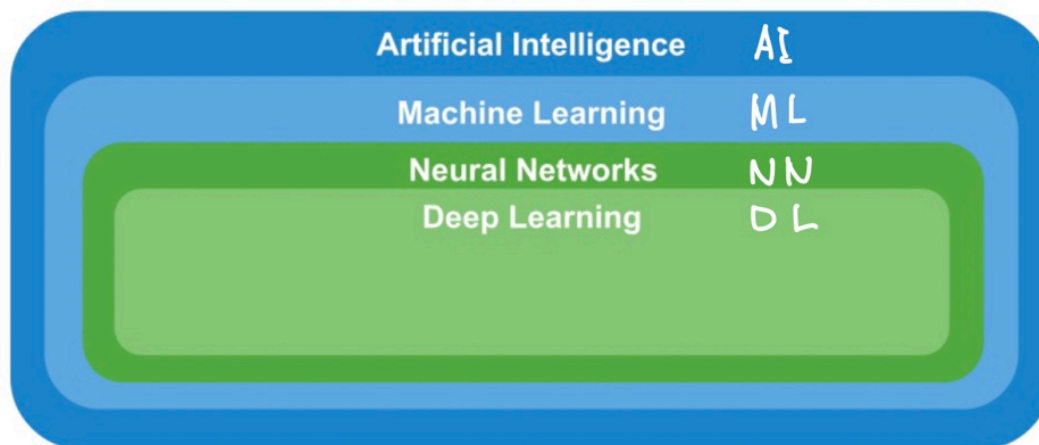## 2. What is the relationship between artificial intelligence and machine learning?

Artificial Intelligence   AI

Machine Learning   ML

Neural Networks   NN

Deep Learning   DL

In my opinion, Artificial intelligence is the largest range and machine learning exists in it. Machine learning is finding solutions while reducing the scope of problems. Artificial intelligence is a trained intelligent machine.

3. What are the fields of application of machine learning?
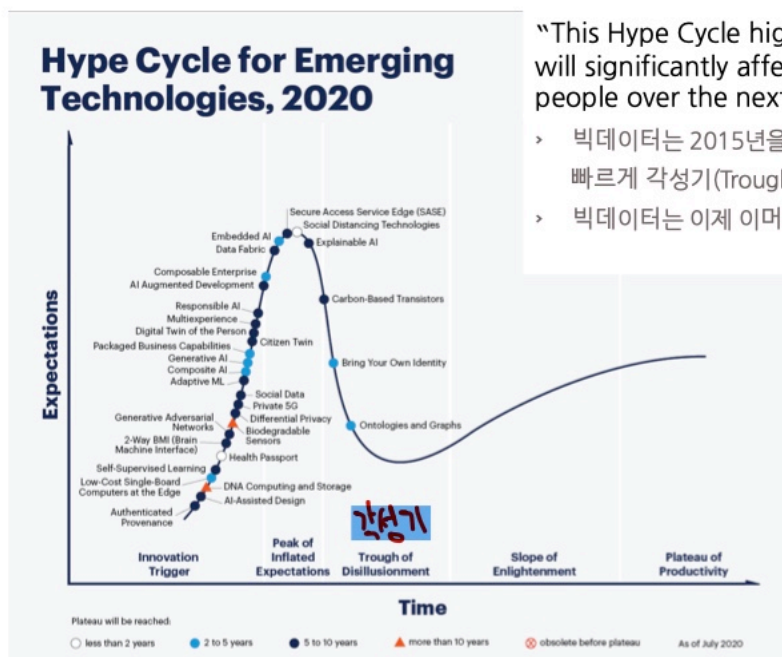
One of the applications of machine learning is big data processing. Looking at big data processing, we collect data first. Process or load the collected data in real time. Process stored data. Explore processed data. At this time, the R and Python languages are mainly used. Analyze, visualize and apply the explored data. It is used in many areas other than big data processing. In case of video information processing, machine learning concepts are also used.

4. What is the efficient way on how to learn machine learning?

To learn machine learning, it is recommended to study math / statistics. Because machine learning itself is mathematics, and it will be difficult to learn machine learning if you are not good at math. If you strengthen your mathematics, you will choose a subject where you can study machine learning yourself. You can also study through books.

The problems of machine learning can be divided into three types of learning.

1. Supervised Learning : When a person enters a label directly and gives the data he or she enters to the computer, the computer learns it.
2. Unsupervised Learning : Learning about data that computers do not label on their own without people. As explained above, unsupervised learning is heavily applied to big data processing.
3. Semisupervised Learning : Learning using both labeled and unlabeled data, usually addresses the kind of problem of learning by supplementing a large number of unlabeled data with some labeled data.

It would be better to study machine learning algorithms after this foundation is established. Machine learning algorithms vary widely, so it will be easy to study only when the basics are solid.
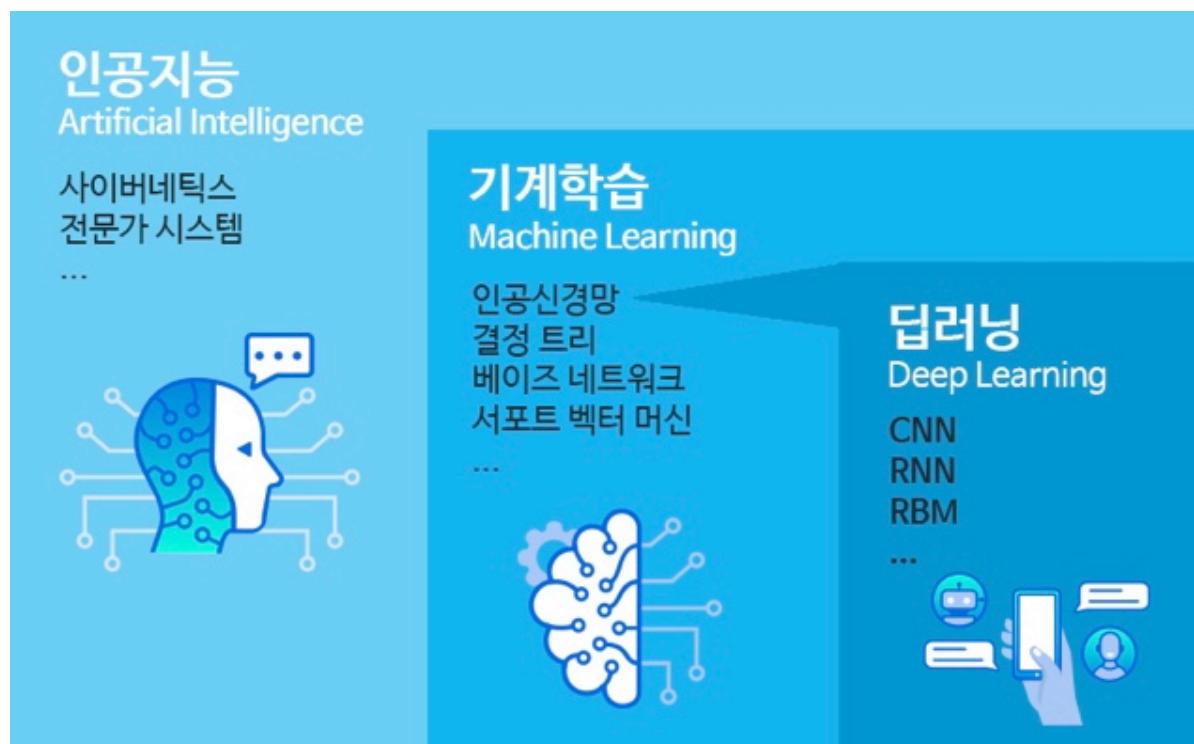

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