Chapter 1

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In general, Artificial Intelligence(AI), Machine Learning (ML), and Deep Learning (DL) are related as follows:

> "Deep Learning is a kind of Machine Learning, and
> Machine Learning is a kind of Artificial Intelligence."

AI is the field contains the machine learning which includes many technology. DL has been inherited from ML(Phil Kim, 2017).
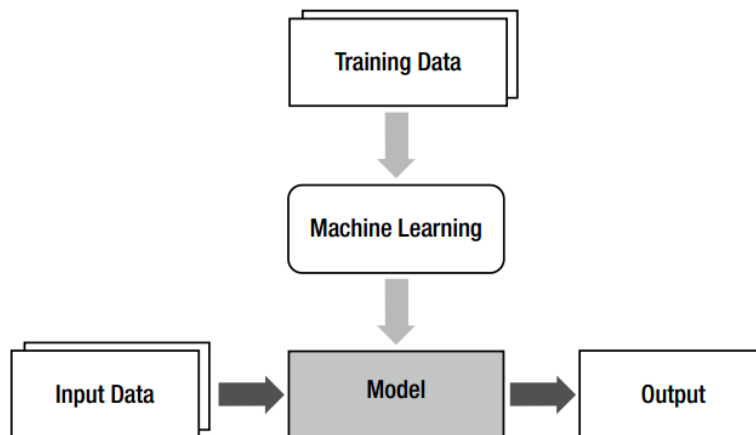
1. Machine Learning

Figure 1: Model based on machine learning

Ordinarily, the data is divided into two parts, one trains for get the model, another is for test.
The challenge for ML is overfitting. It has two typical methods to confronting overfitting : regularization and validation.

2. Types of Machine Learning

The machine learning can be classified into three types depending on the training method. Warsaw

- Supervised learning

- Unsupervised learning

- Reinforcement learning

Table 1: **The architecture of this three types**

Training Method	Training Data
Supervised learning	input, correct output
Unsupervised learning	input
Reinforcement learning	input, some output, grade for this output

References

Phil Phil Kim, Kim. *MATLAB Deep Learning*. Apress, 2017.