Bigdata:

Characteristics : 3V

Triple - A Mindset

1. Abundance of Observation

2. Acceptance of Messiness

3. Ambivalence (**contradictory**) of Causality

Problem : Data Privacy

Federated Learning:

FL is often said to be one of the most popular privacy-preserving AI technologies because private data does not have to be collected or shared with third-party entities to generate high-quality intelligence.

FL is a promising framework for privacy-preserving AI because learning of the data can happen anywhere; even if the data is not available for the AI service providers, **all we have to do is collect and aggregate trained ML models in a consistent way**.

Use Case:

1. Healthcare.

**Impacts of training data and model bias**

In fact, the messiness of data can only be accepted if enough data from a variety of sources and distributions can be fully learned without causing any biases in the outcomes of the learning.

Also, we would probably have to find methods to measure and reduce model bias without directly collecting and accessing sensitive and private data which would conflict with some privacy regulations.

FL also has an aspect of distributed and collaborative learning, which becomes critical to eliminate data and model bias to absorb the messiness of the data. Parallelizing the model training process into distributed environments often accelerates the speed of learning itself.