

Session 1. Technological Revolution and Future City

Technology and Prospect of Artificial Intelligence for Future Society

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It is hard to describe Artificial Intelligence(AI) in one word. Since intelligence itself is a fluid and ambiguous concept, it must also be troublesome to reproduce it artificially. Intelligence is commonly known as an ability to perceive and question external matters, and to adapt to them. However, the mechanism of intelligence is still unclear to humans, and this ambiguity is an obstacle in reproducing intelligence based on a scientific method of traditional reductionism. There are two main technological methods in recreating human intellectual skills; Those are the knowledge-based approach and the data-based approach.

The knowledge-based approach is analogous to a person with recognition, deduction and learning skills who could designate signs and symbols to deposit certain information. This approach intends to solve problems intellectually based on logical rules that are adjustable at times for better learning. Even today, It is a widely adapted method in use for the experts system or the logic/search oriented solution. On the other hand, recently, the data-based approach is called in other names such as 'machine learning' and 'data mining,' in which the data provides cases for the problem presented. From then on, by analyzing the given data, one could narrow down to extract a solution. The model that use deduction from data has long been practiced in statistics and calculating possibilities. Hence, many approaches to machine learning have its groundwork prominently on the data based model. And in order to breakthrough some of the obstinate statistical hypotheses, recent practices have adopted a less rigorous system such as the Neural Network.

At this point of establishment, with numerous methodologies to recreate Artificial Intelligence in existence, some has reached a level of sophistication equivalent to human intelligence and some are still in a baby step testing toys and prototypes. Nevertheless, it is not unreasonable to think that the fast growth of the hardware technology and big data technology may speed up the development of the AI technology as well. It is possible to think that Artificial Intelligence would soon influence not only our daily lives, but also the industrial sector, and eventually replace a great fraction of human jobs and labor. Such phenomenon, where automation is replacing human jobs, has been present since the 18th century Industrial Revolution.

AI technology and its business model require a long term effort and monetary support since the industry cannot meet drastic improvement in a short amount of time. Recently, there are many news talking about the successful cases of AI technology and investment flooding from both the government and the private sector. In order to prevent this from being a one time incident, there

should be a consistent source of support and training for the prospective workers of the field. With AI technology as a core value, people with bright ideas would chip in their ideas, create intelligence services, become highly competitive in the global market, and create a value added outcome. This progress should go along with better public understanding and agreement about Artificial Intelligence. Instead of a fearful indication about Artificial intelligence, it should be regarded as a friendly service for humans because the future co-existing with Artificial Intelligence seems not too far away.