How does Al revolution help us answer the most fundamental problems of philosophy? (Part 1)

In this article, I would like to introduce you to the profound contemplation of these fundamental philosophical issues from the perspective of a leading global technology expert through the following series of articles.

Who I am? I was born to do? How should I live? There have been many articles, many books, many philosophical schools were born to solve the biggest questions about this human existence. In this article, I would like to introduce you to the profound contemplation of these fundamental philosophical issues from the perspective of a leading global technology expert through the following series of articles.

The series is translated from the article on The Edge by author Kai-fu Lee, founder of technology investment company Sinovation Ventures, ranked No. 1 in China by Forbes. Lee experienced research positions at Apple, in charge of operations at Microsoft, Google China. Lee is also a computer scientist who created the world's first voice recognition system. Lee's system is currently being used in Siri of Apple, Microsoft products and many other companies.

Author Kai-fu Lee, founder of China's No. 1 technology investment company Sinovation Ventures (Photo: China Daily)

PART 1: FIRST AND SECOND MANUFACTURING WAVE

The first wave of artificial intelligence

Like other people, the questions that I always ask myself are who am I and why do I exist? As human beings, who are we, why do we exist? When I was in college, I had a much more innocent way of looking. I am very passionate about computers, artificial intelligence, and I think my destiny is destined to work with computer algorithms, and with my colleagues, imagine how the brain does work, the way computers can be as smart as the brain, can even replace the brain, and that's what is called artificial intelligence.

That was my simple look at that time. I pursued it in college, during my master's years. I went to Carnegie Meelon and received my doctorate in speech recognition, then joined Apple, SGI, then Microsoft and Google. In those companies, I continued to work on artificial intelligence. I think that pursuing the way of intelligence and our clarity about artificial intelligence will come back to tell us: "Well, that's how the brain works." We simulate it, and that's the definition of intelligence. It must be the most important thing in our lives: our intelligence, our ability to think, analyze, forecast, understand - all of which can be developed by simulation. on the computer.

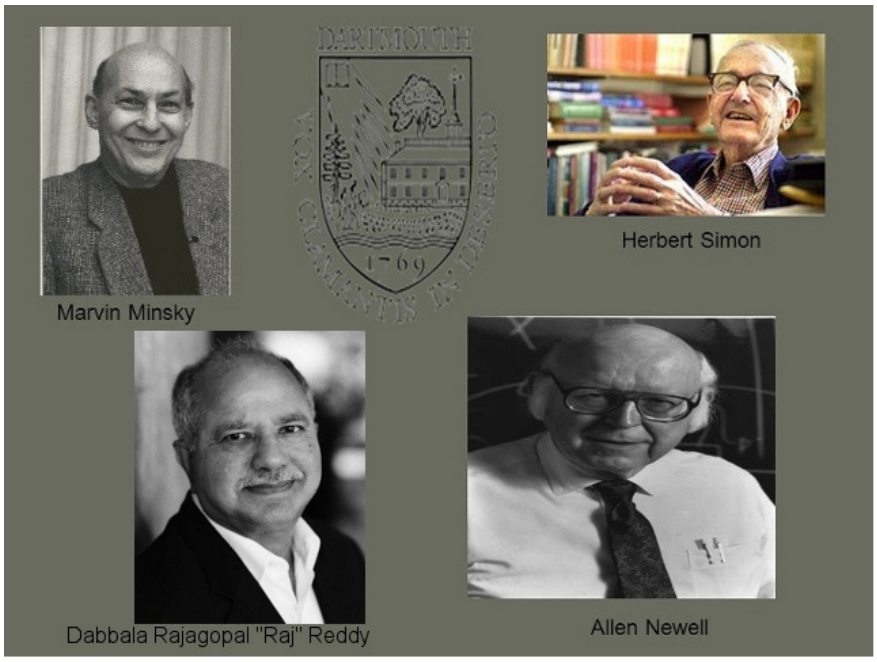
I had the good fortune to meet Marvin Minsky, Allen Newell, Herb Simon (three scientists thought to be pioneers in the field of artificial intelligence), and my advisor Raj Reddy (Dabbala Rajagopal "Raj") Reddy, an Indian-American computer scientist, is also a pioneer of AI. All these people left a profound influence on how I thought. It is harmonious when they are also pursuing knowledge of intelligence. The point at that time is that we will exercise human intelligence as rules that have a way of acting in a human manner if we can show the process of making our thoughts under specific steps.

For example, if I'm hungry, I want to go out and eat. I spent a lot of money this month, I will go to a cheaper place. Cheaper locations are implied as McDonald's. At McDonald's, I avoid fried foods, so I only get a hamburger. The "if, then, other" (if, then, else) is how we think (as we think), and that's the way of dealing with the generation of expert systems or symbol AIs. Firstly. I realize that it is very limited, because when we write rules there are too many rules.

In MCC (computer microelectronics company union), there is a professor named Doug Lenat, one of the smartest people I know. He hired hundreds of people to write down all the rules that we can think of, thinking that one day we will accomplish that, and that will be the brain. His research is funded by Apple and Microsoft. I remember when I visited him, he showed me all the different types of flowers, sharing his understanding of what kind of flowers are, how many wings each flower has and what colors there are. It turns out that knowledge in the world is too much for us to enter, and their interactions are too complicated. That mechanism, rule-based

systems, we don't know how to build it.

It was the first wave. People started to get excited, thinking that we could write down the rules, but that was a complete failure. The result of that failure is that, in a way, there are only a few useful applications. That makes people believe that the AI ??has failed and is not worth pursuing.



The pioneering artificial intelligence scientists Kai-fu Lee was deeply influenced by: Marvin Minsky, Allen Newell, Herb Simon, Dabbala Rajagopal "Raj" Reddy (Photo: Slideplayer, Wikipedia)

The second wave of artificial intelligence

I was fortunate to accompany the second wave, coinciding with my doctoral research work at Carnegie Mellon. In that job, I wondered if we could use some kind of statistics or machine learning. What happens if we collect patterns in all things and train systems? It could be speech patterns to train different sounds in English, patterns of dogs and cats for training to identify animals, etc. They have brought good results at that time. The type of technology that I developed and used in my PhD thesis is called "Hidden Markov Models," which is the first example of an independent voice recognition speaker system. This system has been and is still being used in many products, such as Siri, Microsoft's voice recognition system and other technologies used in computer voice and computer vision. I did it at Carnegie Mellon in the 1980s, completed my thesis in 1988, and continued to work at Apple from 1990-1996, then Microsoft Research around 2000.

We used to be optimistic that the calculation for this work was effective because seeing the results is improving. But after a decade of work, we see important improvements reaching the limit. They couldn't go up any more, so we were scared. Again, many people say, "You can recognize 1000 words, 100 objects, but can't expand. People can understand infinite words, including newly formed words. That not smart.It's not AI ". The second collapse of artificial intelligence happens, because it does not prove that machines can do what humans can do.

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