600.435 Artificial Intelligence

Homework 1

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Nowadays, artificial intelligence can mimic doing some human tasks very well such as driving a car and playing chess. But there are still many limitations on artificial intelligence. For example, when you interact with Siri, Apple's digital intelligent personal assistant, you can find it has a lot of space for improvement. Although Siri is getting improved over time, so far you still need to use some key words and sentence patterns to interact with it. The ultimate goal for scientists who work on artificial intelligence might be to make artificial intelligence more like a "human" intelligence, which means that the artificial intelligence can really "think" like a human, not only follow some predefined rules or patterns. However, creating a real artificial intelligence might not be achievable within few years.

On the other hand, there is another concept of having a real artificial intelligence by "copying" human intelligence from human brain. Instead of creating a real artificial intelligence, scientists also study "mind transfer" [1] (or called "upload", or "brain backup"). This thought originally is for human immortality researches that try to keep a copy of human's brain on computers after the human is dead and make it works like a human's brain, i.e. think like a human. Stephen Hawking also said "I think the brain is like a program in the mind, which is like a computer, so it's theoretically possible to copy the brain onto a computer and so provide a form of life after death." But, if scientists could copy a human's brain to computers, is this copy of brain a real human intelligence or just a simulation of human brain? By "simulation", I mean that it just works follow the rules, logic, patterns copied from the human's brain, not really can think independently (unbounded by some rules). In addition, if a human is consisted of a mind and a body, can a mind resides on computers and a machine or robot (a substitute of body) be deemed a human? Is this approach that continues a human's mind on computers humane?

There are two movies, "Transcendence" and "Chappie", which adopted this kind of concept of mind transfer in their stories. In "Transcendence," the main actor, Will, was an artificial intelligence expert and his brain was "uploaded" to computers before he was dead. When Will showed up on computers, another expert, Max, did

not believe that the one was the real Will in the beginning. On the other hand, Will's wife did believe that the Will on the computer was real him. However, after Will did something that across the line of human nature such as he can connected to people who were cured by his nanotechnology and measure his wife's body conditions, his wife started not to believe in him. In addition, people on the other side were afraid of Will on the computer and wanted to destroy him because they thought it was just a artificial intelligence, not real Will's mind, and also afraid of things they didn't know such as the nanotechnology. In order to destroy Will, one actress threatened Will that he must upload the virus, used to destroy him, or she would kill his friend, Max. Meanwhile, Will's wife also got hurt, and Will wanted to save her. But Will could only save his wife or upload the virus to save his friend. That was a dilemma. Max thought that human emotion can contain illogical conflict, but machine cannot reconcile that. So he thought Will could not care about him because he was a machine. However, Will finally chose to upload the virus and save his friend and this proved that Max is not totally right. The Will on computers could be the real Will's mind, having feeling and emotions.

Although the main point in the movie, Chappie, is about a real artificial intelligence was created and installed on a robot, it also incorporated the concept of "mind transfer" in the story. In the movie, it didn't talk about whether the transferred mind was the real mind of the original one, or it was just a simulation of the mind. Based on my personal observation, it assumed that the transferred mind was the same as the original mind in the movie. Hence, the main actor's mind was transferred to a robot before he was dead and another actress' mind was also transferred to a robot to continue the existence of their mind.

Both of these two movies are related to the concept of transferring a human's mind to computers in order to continue their mind/life. This might sound great to some people. For instance, people will not suffer much pain when their friends or relatives pass away because they can still interact with their mind run on a computer, feeling like their friends or relatives are still alive. Moreover, we can upload or backup our mind on computers and transfer it to a robot when our physical body is not capable of performing some tasks. That really sounds very wonderful. However, if the transferred mind can think independently and has free will, then it could have possibility of causing dangerous effect on human beings because it is not limited by some safety laws such as "a robot may not injure a human being or through inaction

allow a human being to come to harm." Because of having free will, a robot with a transferred human mind may do harm on human beings in order to continue its existence. On the other hand, even a human's mind is transferred to a computer before his death, the transferred mind is definitely not the original mind. Just think of that there is a copy of one human. Although the human and his copy can both experience the same thing on the world, they are still two distinct entities. Just like the version control. When you make a branch on a master, the master and branch are different and they will not be deem the same until they are merged.

Although mind transfer might cause some dangerous effects, it can also help people a lot. For example, if we can upload a very talented scientist's mind to computers, he can continue doing many useful researches fast and forever by his experience, logical thinking, and much more powerful ability of processing data. Just like Will created the nanotechnology in the movie "Transcendence."

In sum, based on the discussion above, I think the transferred mind is not the original one and people should not consider it as an extension of a human's life. In addition, I agree with the point mentioned in the movie "Transcendence" that "machines are meant to aid the human mind, not supplant it." Nevertheless, as a student of computer science, I am still looking forward to the success of mind transfer technology.

Reference:
[1] "Scientists Are Convinced Mind Transfer Is the Key to Immortality," 2013, http://motherboard.vice.com/blog/scientists-are-convinced-mind-transfer-is-the-key-to-immortality.
[2] "Transcendence," 2014.
[3] "Chappie," 2015.