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Term Essay Draft

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Artificial intelligence has been a quite important research area for decades since the famous paper *Computing Machinery and Intelligence* (Alan Turing, 1950) is published on the very famous journal *Mind*. Since then, the works on this area have become more and more sophisticated and today, there are many specific branches under the umbrella of ‘Artificial Intelligence’ such as deep learning, predictive analysis, language processing, image recognition, speech manipulation, neural networks, etc. On the other hand, beyond these specific application domains; there have always been some general questions that attracted people to think, to do research, and to develop certain applications under the scope of artificial intelligence one of which will constitute the basis of discussion for this paper. Can we simulate human mind on an artificial medium; if so, how can we achieve it?

Over the years, this curiosity has driven many people into different approaches both in favor of positive and negative answers to the question raised above. My view on this issue is that we can manage to create such a concept, even though there are some definite steps of advancement to be taken. This means that we -human beings will not be the ones who have direct responsibility of this act, but we will lead the way towards this final phase of fully simulating a human’s mind onto an artificial medium.

As expected, there must be some certain milestones to be taken to achieve this goal and this paper is going to focus on what those milestones are and what should be done to realize those. Furthermore, I will try to respond some possible objections raised against my arguments.

My approach to this issue is really affected by the ideas on evolutionary learning on computers which took place in the paper *Life and Evolution in Computers* (Mitchell, 2001). I believe that machines themselves will be the main actors of examining, interpreting, and reflecting the characteristics of the human mind onto an artificial intelligence by using an evolutionary way of advancing. What remains as the task of humans is to develop the main roots for that evolution. I believe that after humankind improves some certain mechanisms and technology, machines will end up with the ability to put humane way of thinking to a machine.

(For the sake of this draft, please keep in mind that the sequence of the arguments below and provided examples for them are subject to change)

The very first technology to develop must be machines observing human behavior and relating them to certain mental states. This will be the key mechanism for examining the human mind. Similar advancements of this kind have already been achieved (*Machine Analysis of Facial Expressions*, Pantic and Barlett, 2007).

Secondly, there should be a method for machines to reflect some human emotions and behaviors. Examples of this sort of developments have already been seen as well (*Toward Machines with Emotional Intelligence*, Picard, 2007).

After these two mechanisms, another key technology to be developed must be self-learning machines. It will be used by machines to improve their provided skills. This one seems like a very hard one to achieve, but so far, we have seen some samples of this type of advancement (*Self Learning Machines Using Deep Network*, Rashwan and Al Sallab, 2011).

After these are realized and implemented to a machine, theoretically there is no obstacle before a program that is able to observe, interpret, and practice human mind. This phase can be imitated to a baby which is open to environment input and ready to shape its mind using that input. After reaching that point, only required step to fully simulate a human mind is nurturing that baby.

(Please keep in mind that objections given below do not fully represent that will be used in the original paper. There might be additions/removals of objections.)

One might object to this approach by saying a machine can never fully experience having a human mind because its physical entity is not like humans’. This might seem true at first sight, but we shouldn’t forget that our senses and physical responses against those senses are nothing but our brains’ signals to/from our nerves. Therefore, this can also be simulated after achieving the first and third step that allows a machine to trace a human’s thinking process.

The other objection to this point of view might be that interpreting and mimicking human behavior does not make it the exact same way as humans do, a machine is still not capable of becoming human (like system response presented in Searle’s Chinese Room experiment). However, after all, humans can be considered as bionic systems of which programs are coded into their DNAs. Therefore, mechanization of this bionic system can be achieved if given technological advancements are reached.

To conclude, the human mind can be mapped and reflected onto a mechanical medium if the presented technological developments are realized. For now, there are strong pieces of evidence which implicate that those developments can be made in the future. Therefore, we must accept that the human mind can be coded and translated onto the electronic world of reality.