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Introduction to Artificial Intelligence

Yefei Jiang

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Introduction to Artificial Intelligence--(Prof Visser's lecture)

From this lecture, I learned the four approaches have been used to define AI. The first approach defines AI as a new effort to make machines think in the full senses. The second approach is the study of computations, whereby AI systems can perceiving, reasoning, and acting. The third approach is that AI is associated with developing smart machines with the capacity of executing that normally need human intelligence. Finally, in the last approach, I have learned that AI is the study of designing intelligent behavior in artifacts.

When acting like humans, there is a Turing test approach that is used to define intelligence. A machine is intelligent if the interrogator cannot distinguish whether the machine or a person provides the written responses of certain questions. Here, computers possess machine learning, automate reasoning, knowledge representation, and natural language processing. When thinking like humans, the cognitive modeling approach is used to define intelligence. It is a must to determine the way people think so that we can determine if machines think like them. This will be done through introspection, psychological experiments, and brain imaging. Thus, when there is a precise theory of the mind, it is easy to express it to the computer.

In thinking rationally, Aristotle's 'laws of thought' approach is used to define the meaning of 'right thinking.' The syllogisms gave patterns for argument structures that always produced the right outcomes when given the right premises. Here, a notion is developed for statements and solving all solvable problems that are described the logical notions. This approach emphasizes on making correct inferences. I have also learned that when using acting rationally, the agents are supposed to perform in order to attain the best outcome or the best-expected outcome. Computer agents are expected to do more than computer programs. Rational agents can reach good decisions with the help of knowledge reasoning and representation.

I have learned that AI systems are viewed as intelligent agents that can decide the actions to take and the time to take them. Here, these systems are autonomous entities that act, directing their activity towards attaining objectives upon a surrounding. This is made possible by observations through consequent actuators and sensors. Further, I have learned that these agents act without human intervention. They can interact with other agents and perceive the surroundings and quickly respond to changes in the environment. I have also learned that in the structure of intelligent agents it is important to consider architecture and the program.

Indeed this aspect relates to the other aspects of cognitive science as it discusses experimental techniques of psychology so as to develop testable and clear theories of the human mind. Here, there is a scientific study of the mind and its processes. Intelligence and behavior are studied in order to determine how systems execute tasks in relation to how the mind works. Through the study of intelligence and mind, one is able to understand if machines are intelligent. Besides, through psychology, intelligence is influenced by how a system processes thoughts and reasoning as well as its behavior. Here, there is the consideration of how the machine behaves and thinks.