# Analysis of Artificial Intelligence Hypothesis from the Perspective of Philosophy

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**Abstract:** Artificial intelligence is closely related to philosophy, algorithms in artificial intelligence are closely related to logic, intentionality of intelligent machines is closely related to philosophy of mind and so on. However, the beginners of the development of artificial intelligence are concerned about technical problems, and are weak in philosophical thinking. With the development of artificial intelligence, it is necessary to think deeply about its philosophical problems to clarify its philosophical basis and clear away the technical obstacles of the development of artificial intelligence, so as to be conducive to the development of artificial intelligence technology and promote the progress of philosophical research.

## 1. Introduction

In 1950 Alan Turing opened his classic book Computing Machinery and Intelligence by asking: can machines think? But he did not think such questions were worth discussing, for it was difficult to define thinking precisely, so Turing proposed his imitation game, the Turing test[1]. At the heart of the Turing test is whether a computer can behave in a way indistinguishable from a human, the first time that humans have thought behavioristically about the intelligence of a robot. John McCarthy in 19556 for the first time to use "AI (Artificial Intelligence, or AI, for short)" concept, he thought that Human Intelligence, Human Intelligence) as Artificial Intelligence concept to determine the premise, the ultimate goal is to make the computer program control simulating Human ability to solve problems of Artificial Intelligence, was born a to study how to use the machine to simulate the emerging discipline of Human Intelligence. Especially in recent years, the hot concept of "deep learning" indicates that artificial intelligence will undoubtedly become a new trend of future technology development[2].

## 2. The research paradigm of artificial intelligence

Connectionism, also known as Neutral Network AI, mainly studies the connection principle between the neural Network of the human brain and the neural Network of the human brain, represented by David Everett Rumelhart and minsky. The core issue of connectionism is the study of human brain models. Minsky looked at neural networks and thought that ai research should start from neural networks and develop networks that are consistent with the types of connections between neurons in the brain[3]. He thinks that thinking is a hierarchical organization composed of many different intelligent agents who can process different situational information. The purpose of neural network research is to simulate human intelligence rather than simple physical connection mechanism. Connectionism holds that neurons are the basic components and transfer units of human intelligence, which cannot be simulated by simple symbols[4]. Fig.1 is an illustration of convolution neural network.

Some scholars believe that in addition to the research paradigm of symbolist AI and connectionist AI, there is also an Actionism AI. Behaviorism artificial intelligence mainly through the study of behaviorism, the technology of artificial intelligence product actively adapt to the external environment, adjust their behavior according to external data collected at the same time, to respond to the outside world, behaviorism and symbols, artificial intelligence and artificial intelligence connectionist artificial intelligence, it is not dependent on the algorithm and the preset program.The development of artificial intelligence has led to a technological revolution comparable

to the industrial revolution. Some call ai the "mango tree" of the west, and ai has a great role in liberating human beings from monotonous tasks. Luciano Floridi, in his book the fourth revolution: how artificial intelligence reshaped human reality, calls it the "fourth revolution" It holds that artificial intelligence has the same subversive effect as Copernican revolution and Darwin revolution.
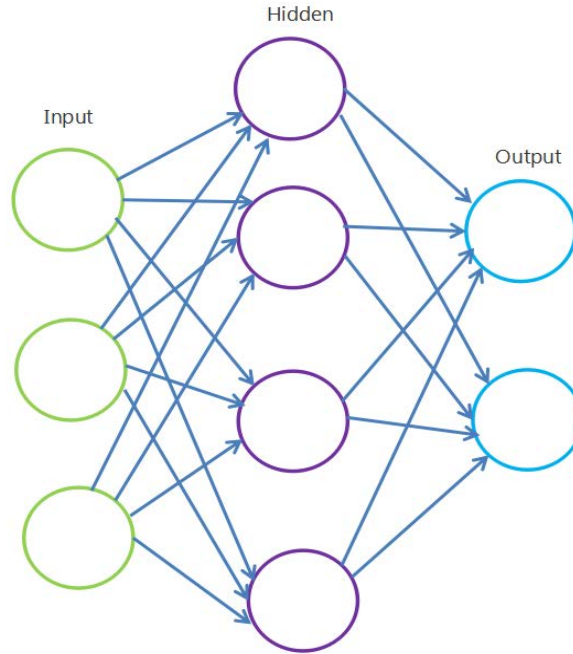


Fig.1 Convolutional Neural Network Graph

## 3. Overview of the development of artificial intelligence

Will tell from the subject classification, artificial intelligence and artificial intelligence philosophy is the study of the different categories, the former belongs to the category of natural science, the latter belongs to the category of the humanities, but is closely related to the philosophy of science, artificial intelligence, for example, in the artificial intelligence algorithm is closely related to the logic, involves the philosophical dimension of research methodology; The intentionality of intelligent machines is related to philosophy of mind and cognitive science, while artificial intelligence is closely related to cognitive science, philosophy of mind, phenomenology and logical positivism. Compared with the development of artificial intelligence technology, the philosophical thinking of artificial intelligence lags behind a little. However, philosophical thinking on artificial intelligence can clarify the concept of artificial intelligence, clarify the theoretical basis of artificial intelligence, analyze the relationship between people and technology in the era of artificial intelligence, and promote the development of artificial intelligence technology. Therefore, the theoretical thinking of artificial intelligence from the perspective of philosophy is necessary.

## 4. Epistemological hypothesis analysis of artificial intelligence

Epistemology is a branch of philosophy that deals with the nature of knowledge and how individuals acquire it. Minsky, the pioneer of artificial intelligence, paid attention to the important role of epistemological research in the study of artificial intelligence philosophy. In this area, we need to work very hard on rigorous epistemological studies." for the theory of artificial intelligence research, it is important to exploit its philosophical foundation, "AI part of epistemology is the study of the what kind facts about the world to offer in a given observation under the condition of the observer and the fact that how to express in computer memory and what are the rules allow

reasonable results from philosophy facts." in the study of epistemology, the difference between humans and machines in the acquisition of knowledge has become the focus of the philosophy of artificial intelligence.

The epistemology of artificial intelligence philosophy must pay attention to the formalization and intentionality. Formalization is rooted in logic. Logicians believe that anything that can be formalized can be done by computer. "intelligent processing process depends on the knowledge mastered by the subject, and the deep and primary problem is to understand the operation and data structure[5].In the formalization problem of artificial intelligence, the formalization problem of common sense encounters difficulties. Intelligent machines only imitate human behaviors according to program Settings, but cannot understand them as humans do.

The development of artificial intelligence must clarify that the second epistemological question is about intentionality. "Intentionality is seen as one of the fundamental features that distinguish an individual from a machine: machines and people can do the same thing, but people have intentionality and machines don't." Consciousness is just an attribute of the brain. Machines and humans can have the same function, but machines have no intentionality, while humans have intentionality. There is an essential difference between man and machine. Man has the ability to understand, while machine does not. This is different from the "Turing test", in which human and machine can have the same reflection or the same behavior, but this is not the essential difference between human and machine. The essential difference between human and machine is that human has consciousness and understanding ability, while machine only makes corresponding response and behavior according to the design of program. Computer cognition is different from human cognition, because human beings usually understand the information they process. Dreyfus is proposed from the perspective of phenomenology calculation is different from the cognitive, because computing lack body sex (embodied) and reality (situated). Dreyfus thinks that symbolism stands on Descartes' rationalist position. Epistemological assumption of semiotism is that the world has structure and knowledge can be formalized. Dreyfus supported connectionism and opposed symbolism. Connectionism holds that the process of intelligence comes from the organization and operation of the human brain, not from computers. Whether it is the symbolist approach, the connectionist approach or the behaviorist approach of ai, it is necessary to consider the ontology and epistemology of ai in order to clarify its philosophical connotation.

## 5. Conclusion

Dreyfus considers the research basis of artificial intelligence from the aspects of epistemology and metaphysics. According to dreyfus, "it is not only Descartes and his descendants, but all western philosophy that supports the processing of symbolic information"[6]. Artificial intelligence pioneer Newell and Simon in the essay, as computer science: symbol of experience to explore and search "to clear the philosophy foundation of frege (Friedrich Ludwig GottlobFrege) and Russell (Bertrand Russell), Whitehead (Alfred North Whitehead) and early wittgenstein's philosophy of logic of mathematical logic, it reveals the artificial intelligence and empiricism and logicism closely linked, In the philosophical analysis of artificial intelligence, we should also pay attention to and draw on the research methods of analytical philosophy -- conceptual analysis and logical analysis. "To talk about the history of artificial intelligence is, in a sense, a retelling of the history of logical positivism," says Hilary Putnam, a professor of physics at the university of New York who has come up with a definitive analysis of artificial intelligence[7].

According to dreyfus, the foundation of semiotic artificial intelligence is logic and rationalism in philosophy, and dreyfus is the successor of logical reductionism tradition. The basis of connectionist artificial intelligence based on neural network is statistics, which regards artificial intelligence as an idealized and holistic neuroscience. Connectionism and symbolism are different, but they share a common theoretical assumption: cognition is an information processing problem, and this information processing is compuTable. The computability and derivation of information are inseparable from logic, which coincides with karnapp's assertion that "philosophy is the method of logical analysis". Therefore, the logical analysis of artificial intelligence is also essential in the

philosophy of artificial intelligence. The research principles of frege, the founder of analytic philosophy, include the following three aspects: first, distinguish psychological things from logical things; Second, never ask the meaning of a word in isolation, can only ask the meaning of a word in the context of a proposition; Third, distinguish concepts from objects[8].The second is this context principles in artificial intelligence and the difference between people is very important, relates to the question of whether artificial intelligence to understand, and artificial intelligence to understand and people's understanding of the difference in the level and the way of problem, with the analysis of philosophical explanation and understanding the distinction between closely linked, can also be based on the analysis of the context dependence to analyze the difference between artificial intelligence and human. From the perspective of methodology, frege advocates the justification distinction between discovery and justification. The psychological method is essentially the method of discovery, which cannot generate universal necessary knowledge by introspection, induction and generalization, while logic and mathematics are based on transcendental, analytical and necessary knowledge, which has nothing to do with psychological factors. Frege's idea is quite different from the idea that artificial intelligence can simulate the human mind through a computer program, a logical or mathematical program. Karnapp rejected metaphysics and argued that the distinction between logical syntax and everyday language syntax was related to the problem that common sense in artificial intelligence research was difficult to formalize. The identity problem caused by The Ship of Theseus paradox and The paradox of The valley pile and The Bald paradox in logic philosophy give rise to thoughts about The boundary between man and machine[9]. Wittgenstein's later period and the Oxford school's understanding of understanding, which is good at analyzing everyday language, have important guiding significance in the epistemology of artificial intelligence philosophy. Therefore, the research on artificial intelligence is not only limited to the reflection on the development of science or technology, but also involves the philosophical thinking on artificial intelligence [10].As winograd said of dreyfus's alchemy and artificial intelligence, "' artificial intelligence 'in some ways resembles medieval alchemy. We are now at the stage of pouring different compounds together to see what happens, and we have not yet come up with a satisfactory theory. The metaphor, which dreyfus coined in 1965 as a condemnation of artificial intelligence, is appropriate and does not imply negative evaluation... It was the curiosity and practical experience of alchemists that provided the rich data on the possible development of scientific theories of chemistry."Philosophical research on artificial intelligence can promote the development of artificial intelligence, and also promote the progress of philosophical research. In addition to the study of artificial intelligence technology, scholars should add the "lost link" of the study of artificial intelligence philosophy.

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