The Theoretical–Methodological and Historical Framework of the Study of Artificial Intelligence as a Modern International Security Challenge

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ABSTRACT

Artificial intelligence is a sub-discipline of computer science. Its goal is to enable computers to recognize patterns using algorithms and make independent decisions. Artificial intelligence is still a young industry. Therefore, even among specialists, there are different opinions about what artificial intelligence should understand and what it should not. Many consider the ability of a computer system to learn on its own as a necessary prerequisite for artificial intelligence, while others refer to it, for example, as a simple voice assistant. In general, there are three different forms of artificial intelligence: weak artificial intelligence, strong artificial intelligence, and the so-called super artificial intelligence.

INTRODUCTION: HISTORICAL STAGES OF THE DEVELOPMENT OF ARTIFICIAL INTELLIGENCE

Just like any event, artificial intelligence has its development history that includes the initial period (1950s years), decline (1960-70s), and revival (since 1980) (Warwick, 2012). Today it is an event of world importance and its development and perfection have already become an irreversible process. It should be noted that the idea of artificial intelligence at the research level is not related to the 20th, but earlier centuries. In the 17th century, the philosopher René Descartes compared a person to a machine (Descartes). In contrast, Philosophers of the same era: Leibniz and Hobbes went even further and the thesis was put forward that thinking is a computational process (Hobbs) and that's it. This philosophical idea is still the basis of this technology (Teich, 2020), which is why It can be said that Descartes and Leibniz-Hobbes are the "fathers" of artificial intelligence, however, the practical implementation of this

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opinion had to be introduced and It took centuries. Particularly, Daniel Dennett (1991) argues that our modern understanding of consciousness is unduly influenced by the ideas of René Descartes. To show why, he begins by describing the ϕ-illusion. In this experiment, two different colored lights are flashed in succession, separated by a few degrees of angular separation at eye level. If the interval between the flashes is less than a second or so, the first light to flash appears to move to the position of the second. Moreover, the light seems to change color as it moves across the visual field. The green light appears to turn red as it moves to the position of the red light. Dennett asks how we can see the light change color before the second light appears. According to the model, there are multiple sensory inputs from a given event and multiple interpretations of those inputs. Sensory inputs arrive at the brain and are interpreted at different times, so a given event can result in a sequence of branchings, the equivalent of multiple drafts of a story. Once each discriminative function has been fulfilled, it becomes available for shaping behavior (Teich, 2020).

Like a number of other theories, the "multiple sketch model" recognizes that conscious experience takes time so that perceptions do not instantly appear in consciousness in all their richness.

Its reality is that the main core of artificial intelligence is artificial methods in practice. The first model of the neural network was presented by McCulloch and V. Pitts in 1943 (Mcculloch, 1990), but the beginning of the history of artificial intelligence is the period, which it can be said, is still connected with the English mathematician, Alan Turing's name (Warwick, 2012). In an article he published in 1950 "Computing Machines and Intelligence," the scientist asked the question - could a machine think? And to get an answer to this question, he proposed a test that He called an "imitation game". It is known as the Turing test and is considered passed if the computer participating in the game answers the questions. By answering, it will convince the people participating in the game that he is also human (Turing, 1950). Turing's work inspired many thinkers to explore the possibility of creating machines capable of thought. Later, this development, from time to time with some obstacles has become an irreversible process. Soon, already in 1956, at the Dortmund conference, it was announced for the first time the term "artificial intelligence" was introduced in the scientific system. Thus, it can be said that in 1956 the official recognition of artificial intelligence as a scientific discipline was held. In 1960-70, despite some efforts, among which It is worth mentioning Weissenbaum's simplest model of artificial intelligence, "Simulated psychotherapist" - "ELIZA", which at that time was a sensational event (Teich, 2020).

But, an important breakthrough in the development of technology was not held. Moreover, this period can be characterized as a kind of decline (Warwick, 2012). Later, the renaissance of intelligence, which began in the '80s and continued in the '90s, has risen to a completely new level, which can be connected with artificial discoveries, made in terms of neural network modeling and Especially in the theory of backpropagation. Virtually new life was breathed into the artificial neural network and, Consequently, the development of artificial intelligence made it possible to learn multi-layer neural networks and solve the "either-or" problem, which significantly increased the capabilities of artificial intelligence. Thus, the new development of artificial intelligence began an irreversible process as well (Kriesel, 2005).

In the 90s in the history of artificial intelligence in general, a sensational event was "DEEP BLUE"'s match with the world chess champion G. Kasparov and victory of AI (Johnson, 1997). However, in a few decades the possibilities of artificial intelligence become completely unimaginable. Among other things, it reached success in the gaming field, which is a kind of "intelligence". It also became a measure. Unlike DEEP BLUE, which is used to play according to a certain rule, today there are already systems (e.g. "LIBRATUS"), that, by self-learning, draw up a game strategy and achieve amazing success (Gessat, 2017).

Very important changes in the field of AI were held within the second decade of the XXI Century.