

Exploring Human Thinking with Techniques of Artificial Intelligence

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Abstract

In this World of Modern Science, the invention of digital computers has led to the creation of humans Intelligent Machines which is more innovative than humans. Human intelligence is measured with an IQ scale which is based on the thinking capability of human beings. Artificial intelligence can be measured in binary digits which is not based on a thinking process but with that of Machine Language namely algorithm. A new system of processing namely a knowledge-growing system was designed to acquire knowledge and information in humans. The language of computers namely algorithms has a wide range of applications that are used in day-to-day activities. There are also other tools that are used in the application of artificial Intelligence with that of human intelligence. They are artificial neural networks, support vendor machines and reinforcement learning. The enhancement and development of business activities are done by the dual process theory of thinking. The dual process theory has both deliberate thinking and Intuition thinking. Abductive logic programming uses both logic and theory in the application needs. This also frames certain policies and strategies for the integration of artificial intelligence into human thinking. The programs of artificial intelligence are compared previously to those of perceptron. The term perceptron means the collection and processing of information that is related to that of neuron cells in the human brain. There are

also certain limitations to implementing it in our day-to-day activities. The main limitation is that it leads to misunderstanding and ambiguity when adapting the machine language.

Keywords: Artificial intelligence, Theories of intelligence, Human thinking, Algorithm, Abductive Learning programming, Critical thinking, Knowledge growing system, perceptron, Reinforcement learning, Language signs, Common sense.

1. INTRODUCTION

The technology of artificial intelligence has been used by scientists for the thinking ability of machines and also in the process of learning like human beings. Alen Turing, a scientist has done a series of tests about machine thinking. The testing proved to be successful for machines to think and learn like humans. It has been phoned that after the interaction of artificial intelligence in the market there has been a rapid growth in technology and business. Reinforcement learning is one of the tools of artificial intelligence that determines the extent of reliability when it is applied.

Artificial intelligence is designed based on scientific findings such as algorithms and models. There are many algorithms such as Fuzzy Algorithms, decision tree algorithms, and models namely neural networks, Support vector machines, and artificial neural networks. These models help in classifying the patterns and predictions of trends. The artificial neural network model has been used in solving many problems with the help of man-made machines and in building mathematical models that imitate the human brain. The algorithms are used in our day-to-day activities in voice recognition, Virtual agents, and Machine learning platforms.

Artificial intelligence also uses the tool of logic to enhance machine learning like that of human thinking. Computational logic is one of the most powerful tools of artificial intelligence. Abductive logic programming is one of the forms of computational logic that plays a vital role in both descriptive and normative thinking. The main use of intuitive thinking strategies is that they can give instant solutions to problems. This is quite the opposite of deliberate thinking which takes time to give a solution by endorsing and correcting the problem. Both intuitive and deliberate thinking are known as the dual process theories which are the properties of descriptive and normative thinking. The normative thinking of the Abductive logic programming Model helps in finding a way to improve human thinking and behavior.

2. REVIEW OF LITERATURE

Nina Bonderup Dohn, Yasmin Kafai, Anders Morch, Marco Ragni (2022), Learning is focus centric on both human intelligence and artificial intelligence. Human intelligence is more concerned with the learning of humans whereas artificial intelligence focuses on understanding machine learning. Computational thinking connects both human and artificial intelligence by educating people about the challenges that arise with the increased applications of artificial intelligence. The significance of computational thinking with respect to artificial intelligence is

1. Humans create and develop artificial intelligence based on computational thinking
2. Enrichment of the artificial intelligence system
3. Explaining the enriched Artificial intelligence system.

Catherine Olivia, Sereati, Aswin Datuvaya, Wahyudi Sumari, Trio Adiono, Adang Suwandi Ahmad (2020), the artificial neural networks, Fuzzy logic, and genetic algorithms are the intelligent and independent instrumental systems of computer technology based on the methods of intelligence. A new processor namely the knowledge growing system algorithm was designed in the process of emulation of acquiring knowledge and information in the human brain and sensory organs. Knowledge growing system is considered as one of the main perspectives of cognitive artificial intelligence. This processor will help in performing the human thinking function with a knowledge-growing system algorithm.

Nisha Singh (2020), the author suggests some specific and main aspects of artificial intelligence which helps in better understanding of it. The upgrade of technology is increased with respect to the increase in the need for artificial intelligence. Artificial intelligence depicts the learning ability of behavior and machine learning just like human thinking. Artificial intelligence is based on many models and algorithms. The model suggests supporting vendor machines, artificial neural networks are used to find the solution for any problems just like the brains of humans. There are many applications of algorithms that we use in our daily lives namely 1. Voice recognition 2. Virtual agents 3. Machine learning platform. Reinforcement learning is one of the latest tools that increases the reliability of artificial intelligence applications in various fields.

Melanie Mitchell (2019), the author describes artificial intelligence as attractive, and exciting, and the characteristics of being explicit and fanciful. Another perspective view of the author about artificial intelligence is that it makes people annoyed, impatient, and scared. The working of machines is illuminated by artificial intelligence that imitates the human process of learning perception thinking ability in creativity and common sense. Integration of artificial intelligence with cognitive science and philosophy examines the extent to which the smart machine can think in a human way and understand its requirement of ambiguous human qualities. Previously programs of artificial intelligence were compared with that of perceptron. The term perceptron relates to the processing of information in neuron cells of a human brain. There is a limitation in perceptron where learning about algorithms has become a major problem and also difficult in training.

Jonathan Michael Spector, Shanahan Ma (2019), the article say that there are four main skills namely communication collaboration critical thinking, and creativity that are required for the next generation. Critical thinking is one of the major skills and people are now well aware of its importance. The concept of the developmental approach is being implemented to develop the thinking habits in the mind of children. This human intelligence can be developed along with the support of artificial intelligence. Care should be taken when developing artificial intelligence and it should not suppress human intelligence. The main limitation of this critical thinking is the lack of implementation in the school curriculum.

Robert Kowalski (2011), the application of different disciplines of artificial intelligence such as probability theory and decision theory which includes formal and logic has played a key role in initiating the development and enhancement of business activities. Computational logic methods can be used both in artificial intelligence and ordinary humans to enhance intelligence and thinking without the help of computers. Abductive logic programming is one of the most important models that has both logic and theory application needs. The dual process theory consists of both deliberate thinking and intuitive thinking. There are three main philosophies of language of thinking first is the representation of a private language, the language of thinking influences speaking with that of thinking and the last one is human thinking which does not have structured language. The abductive logic programming model helps in determining the framework for the objective strategies with the integration of a comprehensive model of human thinking.

Sky Marsen (2008), the article suggests the fundamental trait of human intelligence is the interpretation and communication of data or information. Natural language focuses on linguistic science with the help of using metaphor connotation and emotional expression. The semi-linguistic approach denotes the basic principles of human language which affect the communication and thinking of humans. Natural languages are varied and dynamic. The use of technical jargon helps to minimize the risk of misunderstanding and ambiguity which is the limitation of natural language.

3. HUMAN THINKING

Human thinking is related to that of human intelligence which has a unique system of controlling the thoughts and mind. Human thinking is the manipulation of information in the form of concepts that help in the solving of problems, and reasoning and plays a key role in the process of decision-making. It belongs to the ability of the persons to look at the problematic situations, analyze them, and find the solutions that affect the growth and development of any organization. It is called a cognitive process of representation of memory as it occurs both in conscious and subconscious ways. There are many types of thinking. The organizations are individuals who become conscious of team formation and play a key role in diverse ways of thinking.

3.1 CRITICAL THINKING

Critical thinking is the process of framing questions and examining the assumptions, and validity of the ideas and the statements. Critical thinking is also the process of assessing information and ideas which helps in coming up with better creativity and innovation. The concept of the developmental approach is being implemented to develop the thinking habits in the mind of children.

3.2 CREATIVE THINKING

Creative thinking is considered one of the most popular methods of thinking. It is the process of engaging people with new ideas new theories and new solutions. It is also the process of brainstorming that helps in career development and job-related purposes.

3.3 ANALYTICAL THINKING

Analytical thinking is one of the most common processes or ways of thinking. It is the process of splitting the ideas and the solutions into parts of components. The methods of categorization of creatures have examined true logic and evidence. The scientific approach uses this skill of analytical thinking to propose new theories.

3.4 ABSTRACT THINKING

The process of revealing hidden ideas and concepts and collecting them together is known as abstract thinking. It adopts broader thinking theories in problem-solving from various perspectives and ideas. Abstract thinking involves recognition of patterns, analyzing ideas, synthesizing the information, problem-solving, and creativity.

3.5 CONCRETE THINKING

Concrete thinking is otherwise known as practical thinking as it examines the problem and ideas in a specific Way. It helps in finding the solutions to the problems instantly in a simple and easy way. It is very helpful in performing the manual task.

3.6 DIVERGENT THINKING

Divergent thinking is more concerned with finding the solutions to the problems. This type of thinking is connected with creative and abstract thinking. It is a better way of thinking when adapting a new project as a telephone gathering new ideas.

3.7 CONVERGENT THINKING

Convergent thinking follows a single path in processing ideas by adapting or eliminating them in a logical and analyzing way. It is a very organized form of thinking and represents the efficiency and elegance with which it helps in combining and merging ideas together.

3.8 ARTIFICIAL INTELLIGENT THEORIES

Artificial intelligence has created a major impact in each and every aspect of various fields with the help of technologies. These technologies include machine learning and natural language processing. This machine acquires the qualities of human thinking in decision-making. It is a known fact that artificial intelligence machines have the capacity to understand and remember, related that of behavior and emotions but this can be only done with the help of human beings. The hurdles faced by machines of artificial intelligence in adapting the shifting of behavior patterns with that of human beings. The theory of mind approach of artificial intelligence is implemented and it helps to work better with human emotions. Artificial intelligence normally requires human intelligence namely perception of vision, recognition of speech, skill of decision-making, and ability to translate the languages. The machines are programmed in such a way that they love adjusting to new inputs and performing human-related tasks.

3.9 CRITICAL THINKING IN ARTIFICIAL INTELLIGENCE

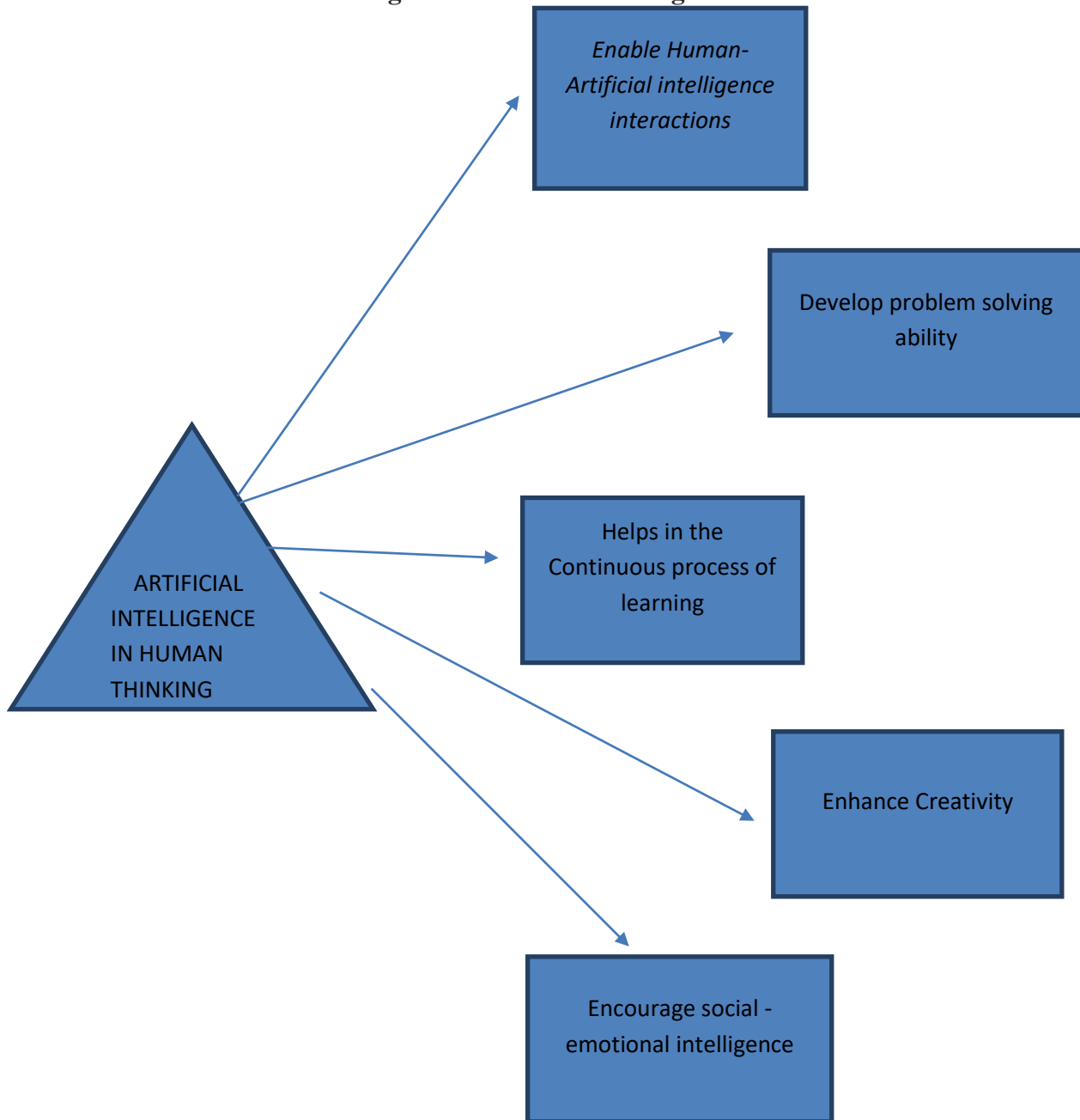
The process of critical thinking cannot be replaced by artificial intelligence. Critical thinking is the process of analyzing the information and decision-making which is done on the basis of evidence and logic. The development of critical thinking systems in artificial intelligence can be achieved by using intelligent tutoring systems. Artificial intelligence can facilitate collaboration and communication among people by using artificial chatbots and virtual assistants which is an aspect of critical thinking. Artificial intelligence provides new and innovative methods for the development of critical thinking.

4. CONCEPTUAL FRAMEWORK

a. Human way of Thinking



b. Role of Artificial intelligence in Human thinking



5. OBJECTIVES

1. To focus on the development of algorithms for solving complex problems and stimulate the thinking ability of humans in machines.
2. To improve human thinking and intelligence with the enhancement of tools of artificial intelligence.
3. To formulate the strategies and policies for the problems and give instant solutions through intuitive Thinking methods for both artificial and human intelligence.
4. To examine the extent to which Smart machines can think and love in a human way.
5. To enrich human intelligence and artificial intelligence with the application of computational thinking.

6. LIMITATIONS

*The main limitation of artificial intelligence in human thinking is the lack of human emotional ability and creativity in making decisions.

*Artificial intelligence may become outdated when not used for training and learning and when human scientists do not evaluate it on a regular basis.

*Without the concept of programming artificial intelligence it has to be performed only with the help of the human brain

*Artificial intelligence cannot perform tasks related to that of empathy or critical thinking when compared to that of human intelligence where tasks can be performed with emotions and feelings.

*The main limitation of artificial intelligence in critical thinking is the lack of implementation with human thinking in the school curriculum.

* Natural language processing has made a huge leak in artificial intelligence the outcomes are not satisfactory as it is very difficult to understand the words.

7. METHODOLOGY

The secondary source of data has been collected for the analysis of artificial intelligence in human thinking. This methodology is very helpful in the enrichment of the data and information that has been gathered. The data has been collected from various articles publications vaccines website and book journals. The methodology has helped in interpreting, analyzing, and synthesizing the data in an efficient and effective way. Captured as the information collector is blood and is used for the development of artificial intelligence and human intelligence.

8. RESULTS AND FINDINGS

*The reliability of artificial intelligence in the processing and analyzing the data has the capability of changing the human way of thinking and learning.

*When the reliability of artificial intelligence increases, human thinking ability becomes slower in problem-solving and critical thinking.

*The technologies of artificial intelligence namely algorithms and methods such as virtual assistants and natural language processing make a huge impact on human thinking.

*The proactive approach must be used in the process of artificial intelligence with that of human thinking.

* Intuitive and deliberate thinking are known as the real process theories.

*Normative thinking of abductive logic programming model helps in improving the way humans think and behave.

*The processing of information is done through the program of artificial intelligence namely Perceptron which is compared to that of a neuron cell of the human brain.

*The use and implementation of natural languages in human thinking of artificial intelligence are wide and dynamic.

*Humans create and develop artificial intelligence based on computational thinking which also helps in the enrichment of artificial intelligence systems.

9. CONCLUSION

The impact of artificial intelligence on human thinking is a complex process. Artificial intelligence has the ability to increase the human intelligence and their capabilities. It has a great impact on the nature of human thinking and its effects on the development of artificial intelligence. Human thinking is achieved by the process of learning in various situations and experiences. Artificial intelligence machines cannot think like that of a human brain and can perform tasks based on programming that has been installed. Innovative or creative thinking is one of the major skills whereas artificial intelligence cannot perform this just like human beings think and act. It is clear from the above data that the development of artificial intelligence cannot be achieved without human activities and thinking.

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