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Artificial Intelligence in Psychology: Nature, Applications and Future Prospects

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ABSTRACT

Artificial intelligence is the simulation of human intelligence processes by machines particularly computer systems. Major applications of AI include expert systems, natural language processing, speech recognition and machine vision. In Actually, AI systems function by in taking enormous numbers of supervised learning data and analysing it for comparisons and trends in order to predict future states.Artificial intelligence (AI) is known as machine intelligence which refers to the capability of computer systems to operate human-like feats of cognition including learning, problem-solving, perception, decision-making, and speech and language.The AI is creating more precise, personalized mental health care services. According to Arend Hintze, AI can be categorized into four types such as Reactive Machines, Limited Memory, Mind's Theory and Self-Awareness.Our technology has gotten more advanced day by day. AI can now assess patients better than a psychiatrist because it can perceive beyond our own human senses. Infrared scan, for example, could be used to identify temperature variations, facial recognising to verify a patient's condition, optical detecting to analysis face expression, and even olfactory epithelium analysis to identify intoxication. Cognitive psychology also aims at understanding the intricacies of cognition by collecting data, testing, and continuing to develop models as to how the man's brain manages and processes complicated ideas throughout awareness, memory, and perception. Now next big revolution that is changing the world is artificial intelligence.

Key Words : Artificial intelligence, Cognitive psychology, Machine learning, Intelligent systems

INTRODUCTION

The simulation of human intelligence processes by machines, particularly computer systems, is known as artificial intelligence. Knowledge - based systems, natural language processing, voice recognition, and machine vision are examples of important AI applications. In actuality, AI system operates by in taking large amounts of labeled training data to analyze it for correlations and patterns in order to predict future states. AI programming concentrates on three cognitive skills: learning, reasoning, and self-correction, each of which is investigated in cognitive psychology. These types of skills or abilities are known as the higher-level mental process. AI also play and important role as an interface between human mind and machines.

Objectives of study:

– Investigating the existence of AI Technology.
– To discuss the applications of AI in psychological studies.
– To review the future of AI in relation to psychological studies.

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Nature of Artificial Intelligence :

Artificial intelligence (AI) is known as machine intelligence which refers to the capability of computer systems to operate human-like feats of cognition including learning, problem-solving, perception, decision-making, and speech and language. Previously, early AI systems could defeat a chess world champion, map streets, compose music, and so on. The "personal assistants" like Siri and Alexa are the best example of AI use in daily life (Zeng *et al.*, 2011). Significant advances in artificial intelligence have occurred in recent years (AI). These advancements have revealed serious limitations in human rationality while also demonstrating that computers can be highly creative. There are also significant benefits for psychologists studying creative thinking (Gobet and Sala, 2019). Nowadays, the researcher's community are using AI to improve predictions, diagnoses, and treatments for mental illnesses. The AI is creating more precise, personalized mental health care services. According to Arend Hintze, AI can be categorized into four types.

Category I (Reactive Machines): These AI systems have no memory and are task specific. Bright Blue can recognize pieces on the chess game and make predictions, but it cannot use previous experiences to make informed ones because it lacks memory.

Category II (Limited Memory): These AI systems have memory, so they can use past experiences to inform future decisions such as decision-making, self-driving cars etc.

Category III (Theory of Mind): Mind's theory, when applied to AI, it means that the system would have the social intelligence to understand emotions.

Category IV (Self-Awareness): This form of AI model is conscious because it has a sense of self. Machines with self-awareness can thus comprehend their current state.

Applications of Artificial Intelligence in Psychology:

Our technology is becoming more advanced by the day. AI can now evaluate patients more effectively than a psychiatrist because it can perceive beyond our own human senses. Infrared imaging, for example, can be used to detect changes in temperature, facial recognising to confirm a patient's identity, optical sensing to evaluate face expression, and even olfaction assessment to detect intoxication (Mednick, 1962). AI can also perform therapy, e-therapy workshops, and evaluations to support human practitioners before, during, and after sessions (Luxton, 2014). These assessments, that include heart rate monitoring and temperature changes, provide valuable insights to the clinician and saves time (Amershi *et al.*, 2019). As noted above, human bounded rationality has the consequence that humans only explore a very small number of subspaces within the space of all possible theories, and even these subspaces are explored only sparsely. Because of mindsets and other biases, even bad hypotheses are kept while more promising ones are rejected. AI can assist in breaking these shackles (Silvia, 2015). Cognitivism also aims to understand the intricacies of cognition by conducting studies, testing, and continuing to develop models of how the human mind manages and processes complex ideas during attention, memory, and perception. The goals of AI and cognitive psychology are similar in that they seek to understand the nature of intelligent, with the former simply trying to build such procedures using advanced technology. Many degree courses instruct the latest in AI and psychology around the world; however, few combine the two disciplines. We have identified the following programmes that include elements of both.

Computational Neuroscience: A programme that combines aspects of psychology, mathematics, and computer science.

- ***Digital Health:*** A programme teaches students how to use chatbots, wearable technology, and the Internet of Medical Things to personalize and promote digital health.
- ***Artificial Intelligence:*** Learns about the mind and cognition through a multidisciplinary approach Researchers and staff come from a variety of backgrounds, including psychology, artificial intelligence, math, philosophy, and neuroscience.
- ***Cognitive Science:*** An interdisciplinary branch that combines psychology, artificial intelligence, neuroscience, and philosophy with the common goal of understanding intelligence.
- ***Cognitive Science in Education:*** Their mission is to improve educational practises and develop innovative methods based on cutting-edge technology.

AI technology that supplements or even replaces therapists, counsellors, or other mental health professionals is not science fiction or even in the near future. The following are the most important AI

applications in psychology:

– Detection and Computational Analysis of Psychological Signals

– Computer Science and Artificial Intelligence Laboratory

– Watson Health

– RP-VITA

– Mental Health Diagnostic Expert System

– AI for Psychological Testing

– Using Artificial Intelligence in Cognitive Psychology

Healthcare, business, education, finance, legal studies, manufacturing, banking, transportation, and security are some of the other applications of AI.

Future Prospects of AI in Psychology:

– Artificial intelligence is shaping humanity's future in nearly every industry. It is already the primary driver of emerging technologies such as big data, robotics, and the Internet of Things, and it will continue to be a technological innovator in the foreseeable future.

– AI is significant because it serves as the foundation for computer learning. Computers can harness massive amounts of data and use their learned intelligence to make optimal decisions and discoveries in fractions of the time that humans would take.

– AI is making great strides in the scientific community. Artificial intelligence can process large amounts of data faster than human minds. Another field that is benefiting from AI is cybersecurity. The threat of hackers is increasing as organizations move their data to IT networks and the cloud.

– Cybersecurity is another field that's benefitting from AI. As organizations are transferring their data to IT networks and cloud, the threat of hackers is becoming more significant.

– The transport sector has been using AI for decades. Although the presence and scope of artificial intelligence have been theoretically existent for some time now, only a few people are aware that we use it on a regular basis. AI has found a special place in people's homes in the form of Smart Home Assistants. Amazon Echo and Google Home are popular smart home devices that let you perform various tasks with just voice commands.

– The medical sector is also using this technology for its advantages. AI is helping medical researchers and professionals in numerous ways. The importance of education in this world has been prevalent, but it continues to grow even today. With a large part of the country's population being the youth, it is important that they receive a good quality education.

Conclusion:

Artificial intelligence is the next big revolution which is changing the world. The estimate is that the majority of the tasks will be performed by AI and machines by the year 2030. Artificial intelligence is a very powerful technology which is changing the world. It is one of the most exciting and promising technologies of the 21st century. Artificial intelligence is affecting various industries including transport, healthcare, e-commerce, etc. It is changing the world in so many ways. It is affecting each and every domain of life. It is one of the most powerful technologies. It is changing the world by making life easy for human beings. There are some of the limitations include such as AI does not have the ability to understand context, does not have the ability to learn new concepts, does not have the ability to understand the aesthetic or emotional value of an experience. There are hundreds of thousands of different jobs out there and AI is not even close to replacing them. Artificial Intelligence has been around for years and the reason. Some of the top industries where artificial intelligence and big data merge to reduce cost and improve efficiency are healthcare, retail, finance, and insurance and logistics.

REFERENCES

Amershi S., Weld D., Vorvoreanu M., et al. (2019). Guidelines for human-AI interaction. Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems, Glasgow, Scotland, **3**, 1–13.

Gobet, F. and Sala, G. (2019). How Artificial Intelligence Can Help Us Understand Human Creativity. Frontiers in psychology, 10, 1401. https://doi.org/10.3389/fpsyg.2019.01401

Mednick, S. A. (1962). The associative basis of the creative process. *Psychol. Rev.*, **69** : 220–232. 10.1037/h0048850

Luxton, D.D. (2014). Artificial intelligence in psychological practice: Current and future applications and implications.

Professional Psychology: Research and Practice, **45**(5) : 332–339.

Silvia, P. (2015). Intelligence and creativity are pretty similar after all. *Educ. Psychol. Rev.,* **27** : 599–606. 10.1007/s10648-015-9299-1

Zeng L., Proctor R.W. and Salvendy, G. (2011). Can traditional divergent thinking tests be trusted in measuring and predicting real-world creativity? *Creat. Res. J.,* **23** : 24–37. 10.1080/10400419.2011.545713.

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