

ARTIFICIAL INTELLIGENCE FUTURE PROSPECTS

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ABSTRACT

Artificial intelligence is a study area and the breakthroughs and developments that have resulted in computers, machines, and other artifacts with intelligence comparable to that of humans, including cognitive capacities, learning, adaptability, and decision-making abilities. The future of AI is rife with uncertainties. In this paper, I've tried to look at the "seeds of time" that we've already sown in this post. I've concentrated on data qualities since they enable AI and define the constraints under which it can operate well.

Keywords: Artificial Intelligence, Neural Networks, Deep Learning, Machine Learning.

1. INTRODUCTION

Several literature reviews have been conducted over the fifty years that artificial intelligence (AI) has been a recognized and active field [1]. The term "artificial intelligence" (AI) refers to a new generation of technologies that aim to imitate human intelligence by interacting with their surroundings. The employees' faith in AI technology is crucial to the success of AI integration in businesses [2]. The use of artificial intelligence (AI), which aims to make machines behave and reason like humans, has received a lot of attention [3].

Artificial intelligence was created as a result of the ongoing development of computer and information communication technologies over time. Coppin defines artificial intelligence as "the ability of machines to adapt to new situations, deal with emerging situations, solve problems, answer questions, device plans, and perform a variety of other functions that require some level of intelligence that is typically evident in humans" [4]. The potential for artificial intelligence (AI) to support and partially automate research has prompted lively discussions across a wide range of scientific fields, including management and the health sciences [5]. A wide range of technologies known as artificial intelligence (AI) promises several advantages for businesses in terms of added business value [6]. Over the past few years, artificial intelligence has seen significant growth. This is because of the widespread use of machine learning, particularly deep learning, which has resulted in the creation of highly accurate models but none that can be used or understood [7].

2. ARTIFICIAL INTELLIGENCE TECHNIQUES

Methods based on artificial intelligence can be combined with the most recent technologies, such as mobile computing, medical devices, and sensor technologies, to create and provide better management services for chronic diseases [8]. As alternatives to conventional methods or components of integrated systems, artificial intelligence (AI) techniques are becoming more and more useful. In a variety of contexts, they have been utilized to resolve difficult practical issues and are gaining popularity in recent years. They can gain from models, are shortcoming open-minded as in they can deal with boisterous and deficient information, can manage nonlinear issues, and once prepared can perform expectation and speculation at rapid [9]. Artificial intelligence is the key to achieving persuasive operational transformations in the majority of contemporary organizational structures, and technological intelligence is the capacity to appreciate and adapt technological advancements. Artificial intelligence has inadvertently made its way into businesses as a necessary activity [10]. To comprehend AI, knowing not many of these key aspects is significant (Figure 1):

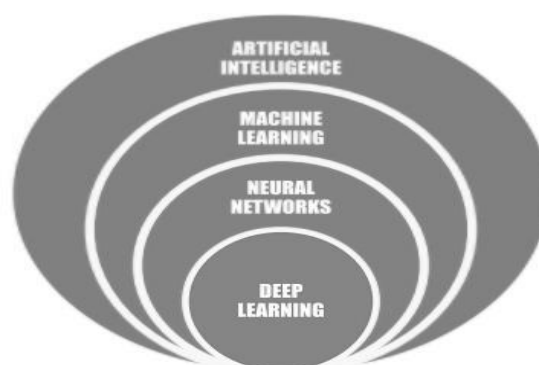


Figure 1: Key aspects of AI [11].

- The ability of machines to exhibit a form of their intelligence is referred to as artificial intelligence. In this case, the goal was to create machines that could solve problems by learning from data.
- AI is essential for simulated intelligence, which relies upon calculations to anticipate results in light of a dataset. The facilitation of machines learning from data for them to resolve issues without human intervention is the goal of machine learning.
- A collection of algorithms that use artificial neurons to compute signals are known as neural networks. The creation of neural networks that function similarly to the human brain is the goal of neural networks.
- A component of machine learning known as deep learning analyzes the input data by making use of the network's various computational layers in a deep neural network. To enhance feature detection, deep learning aims to construct a neural network that automatically recognizes patterns [12].

3. ARTIFICIAL INTELLIGENCE FUTURE POTENTIAL

The combination of computer science and physiology is known as artificial intelligence. To put it simply, intelligence is the computational component of the capacity to do tasks in the real world. Intelligence is the capacity for thought, creation, memorization, understanding, pattern recognition, decision-making, adaptation to change, and learning through experience. The goal of artificial intelligence is to emulate human behavior in computers [13]. Transparency and exploitability are becoming increasingly recognized as crucial issues due to the rapid expansion of advanced AI and ML applications, into the digital health, legal, transportation, finance, and defense sectors [14]. Research on AI in optics has difficulties. The caliber of the datasets used to train and validate AI software determines its capabilities. Although it seems logical to believe that the more photos, the better, it can be difficult to forecast how many training images would be needed in a dataset. The training procedure is less effective when there are too many datasets, and the MLC may end up overfitting the training dataset. For increased external validity, the dataset should also contain images from a diverse demographic. Algorithms might not apply to all situations; The assessments' accuracy may be affected by subtle differences between brands of machines. Additionally, it may be useful to limit the number of classifications within a program to those that have significant prognostic relevance to reducing both the size of the dataset and the complexity of the algorithm[15].

4. CONCLUSION

AI technology has a lengthy history and is actively evolving and expanding. It focuses on intelligent agents, which have tools for observing their surroundings and acting accordingly to increase the likelihood that a goal will be achieved. Through a process of logification of interactions and tasks, we must try to develop AI by utilizing data that is as much as possible hybrid and, ideally, synthetic. Additionally, we must accomplish this by encasing realities around the capabilities of our artifacts, transforming as many difficult problems as possible into complex ones. To put it succinctly, we must attempt to ladyfy tasks and interactions in enveloped environments to create hybrid or synthetic data to address complex issues. AI will be more successful the more this is possible.

5. REFERENCES

- [1] M. Kumar and I. Sood, "Review on artificial intelligence techniques," J. Crit. Rev., vol. 7, no. 7, pp. 1363–1367, 2020, doi: 10.31838/jcr.07.07.247.
- [2] E. Glikson and A. W. Woolley, "Human trust in artificial intelligence: Review of empirical research," Acad. Manag. Ann., vol. 14, no. 2, pp. 627–660, 2020, doi: 10.5465/annals.2018.0057.
- [3] Y. Pan and L. Zhang, "Roles of artificial intelligence in construction engineering and management: A critical review and future trends," Autom. Constr., vol. 122, no. August 2020, p. 103517, 2021, doi: 10.1016/j.autcon.2020.103517.
- [4] L. Chen, P. Chen, and Z. Lin, "Artificial Intelligence in Education: A Review," IEEE Access, vol. 8, pp. 75264–75278, 2020, doi: 10.1109/ACCESS.2020.2988510.
- [5] G. Wagner, R. Lukyanenko, and G. Paré, "Artificial intelligence and the conduct of literature reviews," J. Inf. Technol., vol. 37, no. 2, pp. 209–226, 2022, doi: 10.1177/02683962211048201.
- [6] R. Bunod, E. Augstburger, E. Brasnu, A. Labbe, and C. Baudouin, "Artificial intelligence and glaucoma: A literature review," J. Fr. Ophtalmol., vol. 45, no. 2, pp. 216–232, 2022, doi: 10.1016/j.jfo.2021.11.002.
- [7] G. Vilone and L. Longo, "Explainable Artificial Intelligence: a Systematic Review," no. DI, 2020, [Online]. Available: <http://arxiv.org/abs/2006.00093>
- [8] I. Contreras and J. Vehi, "Artificial intelligence for diabetes management and decision support: Literature review," J. Med. Internet Res., vol. 20, no. 5, pp. 1–21, 2018, doi: 10.2196/10775.

- [9] A. Mellit and S. A. Kalogirou, "Artificial intelligence techniques for photovoltaic applications: A review," *Prog. Energy Combust. Sci.*, vol. 34, no. 5, pp. 574–632, 2008, doi: 10.1016/j.pecs.2008.01.001.
- [10] P. Dhamija and S. Bag, "Role of artificial intelligence in operations environment: a review and bibliometric analysis," *TQM J.*, vol. 32, no. 4, pp. 869–896, 2020, doi: 10.1108/TQM-10-2019-0243.
- [11] S. B. Khanagar et al., "Developments, application, and performance of artificial intelligence in dentistry – A systematic review," *J. Dent. Sci.*, vol. 16, no. 1, pp. 508–522, 2021, doi: 10.1016/j.jds.2020.06.019.
- [12] A. F. S. Borges, F. J. B. Laurindo, M. M. Spínola, R. F. Gonçalves, and C. A. Mattos, "The strategic use of artificial intelligence in the digital era: Systematic literature review and future research directions," *Int. J. Inf. Manage.*, vol. 57, no. December 2019, p. 102225, 2021, doi: 10.1016/j.ijinfomgt.2020.102225.
- [13] K. Kumar and G. S. M. Thakur, "Advanced Applications of Neural Networks and Artificial Intelligence: A Review," *Int. J. Inf. Technol. Comput. Sci.*, vol. 4, no. 6, pp. 57–68, 2012, doi: 10.5815/ijitcs.2012.06.08.
- [14] P. P. Angelov, E. A. Soares, R. Jiang, N. I. Arnold, and P. M. Atkinson, "Explainable artificial intelligence: an analytical review," *Wiley Interdiscip. Rev. Data Min. Knowl. Discov.*, vol. 11, no. 5, pp. 1–13, 2021, doi: 10.1002/widm.1424.
- [15] D. T. Hogarty, D. A. Mackey, and A. W. Hewitt, "Current state and future prospects of artificial intelligence in ophthalmology: a review," *Clin. Exp. Ophthalmol.*, vol. 47, no. 1, pp. 128–139, 2019, doi: 10.1111/ceo.13381.