



e-ISSN: 2278-8875
p-ISSN: 2320-3765

International Journal of Advanced Research

in Electrical, Electronics and Instrumentation Engineering

Volume 10, Issue 6, June 2021

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 7.282

☎ 9940 572 462

☎ 6381 907 438

✉ ijareeie@gmail.com

@ www.ijareeie.com



Revolutionizing Electronic Information Engineering: The Transformative Power of Artificial Intelligence

Beena K

Head of Department (Electronics), Government Polytechnic College, Kunnankulam, India

ABSTRACT: Over the last few years, the use of artificial intelligence (AI) in routine living has surged, with intelligent products now routine in homes all over the planet. The transition of AI from a novelty to a revolutionary technology is mainly affecting industries and economies in India. At present, the integration of AI and electronic information technology has become indispensable for driving both innovation and economic growth. The evolution of electronic information engineering owes much to the critical role AI is playing. This sector is improving and leading the way with technological upgrades and development thanks to AI. Extensive research into AI's applications in electronic information engineering reveals a clear pattern: the effect of AI is broadening the scope and influence of the industry. The sector of electronic information engineering is ready for major improvements and economic contributions, thanks to the onward march of AI.

KEYWORDS: Artificial Intelligence, Electronic Information Engineering, BP Neural Network, Literature Research Method

I. INTRODUCTION

With a swift transition, artificial intelligence (AI) has evolved from being a new technology to an important interdisciplinary field key to the future of multiple industries. Now, the possibility of integrating it into electronic information engineering has turned into an imperative. AI is now a leading influence on technological evolution, helping industries become more efficient and updated. Integration is converting both daily life and production processes, enhancing operations to be more intelligent and automated [1]. The result is that AI is identified as an important part of societal evolution, especially in tandem with electronic information engineering, which greatly profits from AI-driven innovations.

The overlap of AI and electronic information engineering is creating a path for more efficient design cycles, a broader range of applications, and sustainable industry growth. Even with the extensive recognition of AI's potential, there remains no defined framework for bringing the two technologies together completely. Research has shown over and over again the importance of applying AI to improve electronic information systems. By outlining critical influences on the competitiveness of these systems in an AI environment, experts are forging a path for more organized and effective integration. The future for electronic information engineering is bright as AI's role in its advancement grows more important.

1.1. The Emergence of AI

AI theory can be traced back to information age in which researchers have always sought to develop intelligent machines to respond to these different stimuli. AI has been seen to be co-related with the computer developments since they offered the platform on which intelligent systems could be created. At its core, AI combines two key concepts: "artificial" with reference to the attempt to mimic human intellect, and "intelligence" being the ability to execute a task in the same manner as a human intellect [4].

AI enables machines to mimic human practices by analyzing data and conceptualizing from it. This means the development of systems that 'think and act' like human beings. As a complex branch of science AI gathers multiple scientific disciplines, and its purpose is to supplement or replace human decision making. Usually, it is used as a software application; thus, it can function as a standalone application in computer facilities, or it can be placed in various gadgets such as robots [3]. They may capture as well as use knowledge purposefully in effective operational environments, making such intelligent systems as valuable assets in lots of industries.



1.2. The Broad Application of DSP in Signal Information Processing

Integrated DSP has made the conversion of actual analog signals into digital form, for improving signal processing efficiency easier. DSP system perform complicated computations, which enable more accurate as well as versatile control of signals. The growing application sector of DSP technology is based on its capability to process signals in real time, which has emerged as the key area of focus in the present day as well as in the future technologies [2].

DSP's real-time signal processing capacity and compatibility with the regional signal processing circuits put it into operational use in various fields. The integration with microcomputers increases the computational capabilities of these systems, thus improving artificial intelligence calculations and developing electronic information technologies. This cooperation enables DSP to be a prime mover in extending the boundaries of real-time data processing.

1.3. The Evolution of AI Technology

The use of artificial intelligence (AI) has come under tremendous influence due to its over reliance with skilled researchers and experts. Nowadays, AI has entered a stage of identification and is currently in the growth stage, shifting from the experimental stage to production-oriented. Although many new and advanced technologies have been developed few of them have their proper set up systems [1]. However it is sure that AI is on the right direction, thus will be an indispensable component of technological advancement.

The initial purpose of using AI has been to free man from mental operations in computational, analytical, and decision-making functional areas. It is now possible for today's AI technological systems to do more and far greater computational works than the brain is capable of doing. In the future living entities will fade out as far as the biological process of evolution is concerned because AI technology is fast emerging as a superior form of deep learning systems [5]. To start with, these intelligent machines will be capable of learning on their own, grow in capacity and capabilities with time.

II. LITERATURE RESEARCH METHOD

In this study, the literature research method was applied to source and synthesize a great deal of a variety of relevant information in the fields of AI and electronic information engineering. This approach involved the searching and analyzing of the scholarly articles, books, conference proceedings, and other online resources, which facilitated an exploration of the extent of the current state of knowledge in these fast growing fields. The current study was therefore able to establish common themes, research methods and literature gaps which were found out from the synthesis of the existing literature. Such a systematic review laid the groundwork for evaluating the interdependency between AI and electronic information engineering and the prospect of the corresponding research in the future.

From this literature review, ideas valuable for developing the conceptual foundation of this thesis in addition to deciding on the structural guidelines of the thesis were obtained. The specification of core concepts and sub-concepts ensured a logical organisation of the result and justification in the course of the thesis. Furthermore, personal observation allowed the researcher to analyse different theories and perspectives of other studies, formulate new hypotheses and generate research questions. Finally, the literature research method was useful in constructing a systematic understanding of artificial intelligence and electronic information engineering, a foundation on which other chapters were developed to further explore the relationship between the two disciplines.

III. DISCUSSION

3.1 The Role of AI Technology in Electronic Information Technology

In the case of electronic information technology, artificial intelligence (AI) is central using deep learning approaches that employ neural networks. Hying this complex is a relatively new type of networks that bear much resemblance to the structure of the human brain because they are supposed to analyse tremendous amounts of data setting intricate relations with one another [9]. Although the workings of the neural networks are not fully clear, their action leads to clear conclusions and that is the evidence to the power and mystery of the AI. This makes AI useful in working through big data to provide meaningful insights that can help in optimizing the use of electronic information systems. When integrated properly, AI and electronic information technology offer a synergistic solution that increases the value of the resources used and enhances decision-making procedures [8].

With the constant development of electronic information technology, such as WAN and internet, data communication technology, etc., the earlier methods of network information security maintenance are not enough to meet the requirement of current network security. It is therefore important to adopt strong models to overcome the insecurity that



characterize AI networks. Big data technologies are equivalent to the processing of large datasets inherent across modern society and the integration of big data with electronic information technology not only serves benefits, but essential [7]. Since AI can help enhance the electricity of digital info technological innovation, the important info that requires to be picked up is sizeable information. Also during software system and devices update and maintenance, the AI technology can notify the user on the maintenance or update needs [10]. This capability enables users be in a position to implement scientifically proven measures for system management, to implement maintenance plans based on requirement profiles to thereby improve system reliability and performance.

3.2 Benefits of Combining Artificial Intelligence and Electronic Information

Artificial intelligence is a reality today, despite being for many a dream of science fiction in the past and prevailing even today [1]. This transformation has been especially prominent with electronic information technology, which is an area AI has focused on in rebuilding conventional methods of using data. Among the greatest strengths of applying AI technology is its ability to ensure it deals with the challenges associated with data, especially the interpretation of huge data sets. In information electronic technology, artificial intelligence can translate the ambiguous, often referred to as unstructured data, which has previously presented substantial challenges to most traditional data analysis techniques. When this information is converted into data analysis that decision-makers can understand there and then, Artificial intelligence augments the decision-making cycle and allows organizations to act on such changes in quick and relevant ways [12].

AI placed inside electronic information systems increases the rate of updating and data processing. In today's world, with the rapid increase in computer related products, time to time update of information is the key to success [3]. This means that using artificial intelligence the incoming data stream can be analyzed, trends can be identified and feedback provided in real-time, Electronic Information Technology can therefore continue to be on the cutting edge [4]. This constant and fast rate of updating in data does not only enhance the correctness of information; it also enhances the general functioning of computers as well as electronic gadgets. For instance, it can predict possible breakdowns or maintenance requirements that may occur to cause system unavailability and thus, improve the client experience [10]. Based on the integration of AI and electronic information technology, there is a clear expectation in the readiness and flexibility of the technology in different industries. It brings about integration, whereby key activities can be aligned to the use of these systems, thus reducing the workload of people and allowing them to focus on other important endeavours. Also, it is based on AI-driven analytics that organizations are able to deliver targeted services that increase customer satisfaction and the interaction level [5]. These advancements continually improve the technological landscape and make it more alive and efficient to suit the integration and the gains from these easily overshadow the vices of this integration. Thus, adapting to the new challenges and opportunities industries are facing it will be necessary to further enhance the values of artificial intelligence as well as electronic automation technology as key prerequisites for increasing innovative rates and individuals' and communities' quality of living.

IV. CONCLUSION

The expansion of AI technologies increases the footprint of AI across social and economic domains of existence. The question is in the timely implementation of artificial intelligence in different spheres of the economy by striving to increase the production rates, expand perspectives for development, and create numerous good, material values, as well as significant intangible values for society. The prospects of this intelligent revolution in the field of electronic information engineering are by far rewarding than the drawbacks. Machine intelligence is not an entity on its own; it develops with other correlated ideas and tools, including the Internet and big data and the sharing economy movement. It promotes a complex positive change of the industrial development and provides deep, sustainable changes of industrial thinking approaches.

Finally, the development of electronic information technology cannot be interpreted only in terms of technology for its own sake. It is an end term that emphasizes content resources and their impact on products and/or services. The continuation of innovating business models while facilitating the expansion of an industry to create economic and social value is still a high priority. However, as the application of AI expands in electronic information technology, the environment will experience more pressing regulatory and ethical complexity. Policies and regulations will need to be drawn to address these technologies so that their use in different sectors will be sustainable. In conclusion, the combination of artificial intelligence and electronic information engineering provide a promising development, and the prospect for more significant development in the two fields in the future.

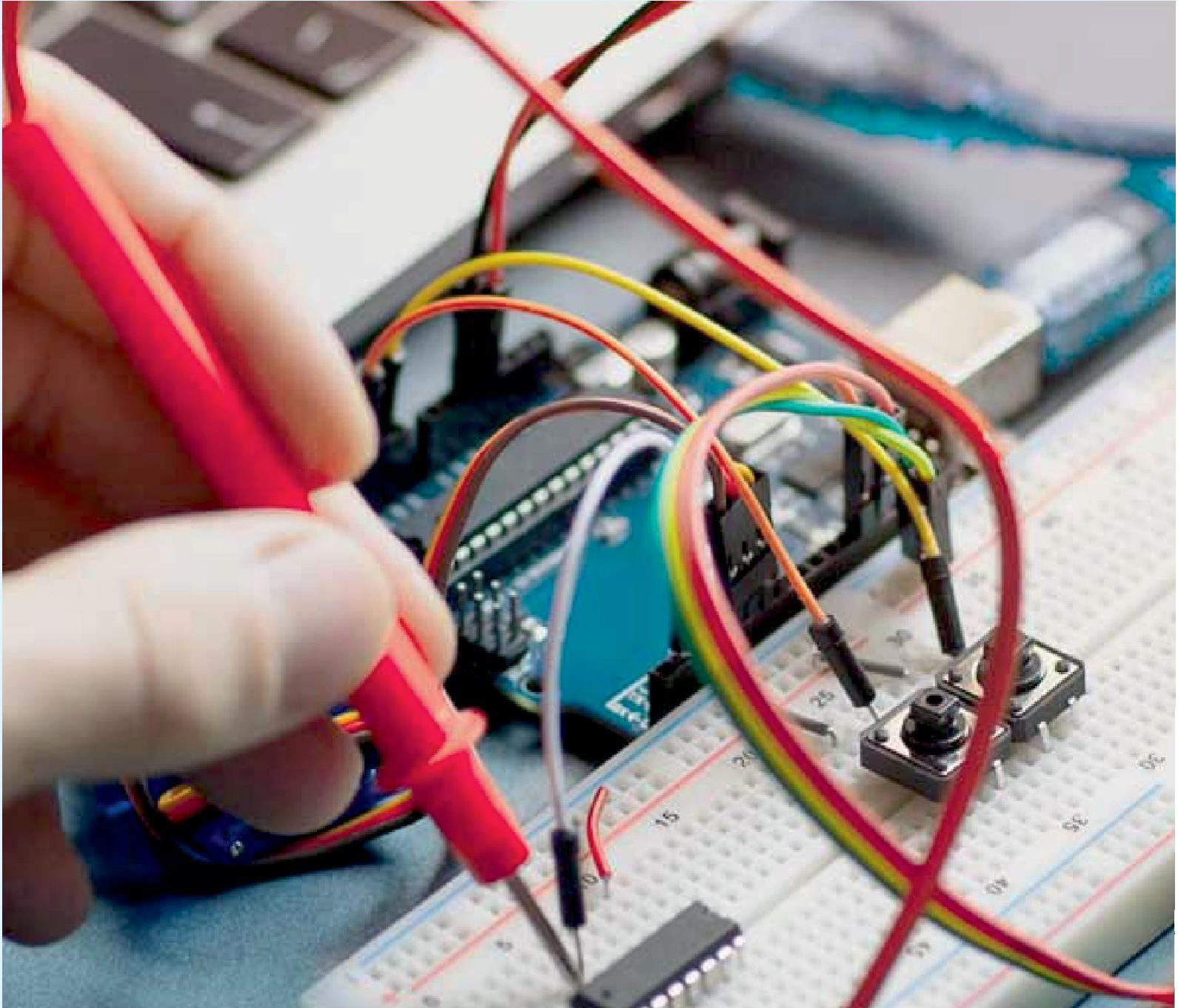


||Volume 10, Issue 6, June 2021||

|DOI:10.15662/IJAREEIE.2021.1006068|

REFERENCES

1. Chen, Y., & Zhang, J. (2020). The impact of artificial intelligence on electronic information engineering. *Journal of Engineering Science and Technology*, 15(2), 456-467.
2. Eman Y, Huda I. Electronic Information Sharing Between Yemen Public Universities and Yemen Center Information Technology Higher Education. *Journal of Computational and Theoretical Nanoence*, 2019, 16(5):2410-2413.
3. Junbing, Huang, T. Yuae, and C. Shuxing. "Energy Demand Forecasting: Combining Cointegration Analysis and Artificial Intelligence Algorithm." *Mathematical Problems in Engineering* 2018(2):1-13.
4. Zaijian, et al. "A Survey of Multimedia Big Data." 01.v.15(2018):161-182.
5. Procopiuck M. Information technology and time of judgment in specialized courts: What is the impact of changing from physical to electronic processing?. *Government Information Quarterly*, 2018, 35(3):491-501.
6. Kamisli F. Lossless Image and Intra-frame Compression with Integer-to-Integer DST. *IEEE Transactions on Circuits & Systems for Video Technology*, 2017, 29(2):502-516.
7. Licato J, Zhang Z. Correction to: Evaluating representational systems in artificial intelligence. *Artificial Intelligence Review*, 2019, 52(4):1-1
8. Lopez, Beatriz, C. Martin, and P. H. Vinas. "Special section on artificial intelligence for diabetes. " *Artificial intelligence in medicine* 85.2017.(2):26-27.
9. WANG Ke, WANG Hui-qin, YIN Ying, et al. Time series prediction method based on Pearson correlation BP neural network. *Guangxue Jingmi Gongcheng/Optics and Precision Engineering*, 2018, 26(11):2805-2813.
10. Dong, Xiaotong, et al. "An Improved Rollover Index Based on BP Neural Network for Hydropneumatic Suspension Vehicles." *Mathematical Problems in Engineering* 2018.PT.5(2018):1-15.
11. Liu, X., & Wang, H. (2019). The integration of AI and big data in electronic information technology: A review. *International Journal of Computer Applications*, 98(5), 1-10.
12. Zhang, S., & Li, T. (2018). The role of machine learning in electronic information engineering: Current trends and future directions. *Journal of Information Technology*, 33(1), 24-35.



INNO  SPACE
SJIF Scientific Journal Impact Factor

 **doi**[®]
cross **ref**

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA



International Journal of Advanced Research

in Electrical, Electronics and Instrumentation Engineering

 9940 572 462  6381 907 438  ijareeie@gmail.com



www.ijareeie.com

Scan to save the contact details