IJFANS INTERNATIONAL JOURNAL OF FOOD AND NUTRITIONAL SCIENCES

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11, Iss 4, April 2022

An Analysis of Artificial Intelligence in the E-Commerce Sector

Aaditya Jain, Assistant Professor,
College of Computing Sciences and Information Technology, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, India
Email Id- jain.aaditya58@gmail.com

ABSTRACT: ***In E-commerce sectors, the role of humans is less than the role of technologies in modern era, as it's more about learning algorithms. The digital transformation and growth of software make the e-commerce industry more convenient. Artificial Intelligence (AI) can impact the business functions of organizations very effectively. Data mining which is a component of AI help to gathering of both current and future data for correct predictions. Machine Learning (ML) is a subfield of AI analysis using the collection of algorithms to apply experience and provide some methods to solve particular problems. Many companies use AI and ML to give better user experiences and also improve their product selection. Due to AI, we get more targeted marketing and advertising. More advanced Artificial Intelligence and Machine Learning enabled deep personalization techniques to customize content by the user. By analysing data from purchase history and customer searches and company always notify the products by showing notifications, and emails to the customers. Delivering targeted marketing and advertising messages for their customers can increase retention. The targeting of products for a particular audience is mainly derived from customer searches and purchasing history. This study provides an analysis of artificial intelligence in the E-Commerce sector.***

KEYWORDS: ***Artificial Intelligence, Machine Learning, E-commerce, Marketing, Sales.***

1. INTRODUCTION

It is easier to collect and process customers about their online shopping experiences. AI makes it easy to personalize product recommendations based on past customer behaviour. Websites that recommend products are based on past customer searches and purchase history. Purchase recommendation is mainly based on purchase history, ratings, searches, and sharing of the products with the other friends.AI enables one to make a strategy to provide a particular discount at a particular time. It also helps to provide the minimum discount necessary for the sale. In customer Segmentation, we divide our customers into segments based on common characteristics [1], [2]. The customers who are interested in that particular product then these customers are put in the particular segment. Due to AI retailers can anticipate future sales by analysing past sales, and identifying trends. Figure 1 illustrates the AI utilization in E-Commerce sector.

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11, Iss 4, April 2022

Figure 1: Illustrates the AI utilization in E-Commerce Sector [Ziniosedge].

AI-assisted product recommendations, here retailers use the collection of data from different channels, and previous transactions to know the trend in shopping. This analysis can be used for personalized product recommendations. AI read the customer behavior and provides predictions that what the customer wants. Due to this we can better predict future purchases and design customized sales strategies based on customer behavior trends. The important aspect of personalization is the search result. With advanced semantic-based site search, customers can easily navigate the store and the products according to their choice without wading through a lot of unnecessary results. Modern chatbots can interact with customer data and extract details of a customer and respond in the most efficient and personalized way in real-time [3].

The amazing application of artificial intelligence in e-commerce is through virtual assistants. Virtual Assistants contribute a lot to creating an efficient sales process. These assistants communicate with customers to understand their preferences and provide them with the best shopping experience. Pricing products is no more a guesswork. AI can be useful learning algorithms that assess market dynamics. Optimal pricing of the merchandise helps a business stay relevant and ultimately succeed in a competitive environment. AI allows for efficient inventory and assortment management. This is only achieved when a huge volume of data is effectively and rapidly analyse to generate actionable insights that could be put into action immediately [4]–[6].

E-commerce websites have a ton of customer data that will be vulnerable if there are not any proper cybersecurity measures in place. So, e-commerce business owners can use artificial intelligence to secure their websites. Bots form a large amount of the internet traffic and they can prove to be dangerous. Bots can steal credentials create fake accounts and cause data fraud. These types of threats are better tackled using AI and machine learning rather than manually. With the application of artificial intelligence in e-commerce you can easily distinguish between good bots like search engine crawlers and bad bots that will cause problems for your e-commerce store. Making intelligent machines and computer programs is the engineering and science of artificial intelligence [7].

Comparing artificial intelligence because it places a strong emphasis on computation and is due to its distinction from computer science the importance of perception, analysis, and action

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11, Iss 4, April 2022

Artificial goal of intelligence is to create intelligent machines or software, which would enable people to think as humans. The father of John McCarthy is credited with synthetic intelligence. The foundation of artificial intelligence is numerous science and technology subjects. Artificial intelligence has enabled machines to compete with people in video games. In several tactical games, including poker, artificial intelligence is used games like chess and tic TAC toe Machines have the ability to the capacity to consider numerous positions based on heuristic knowledge. Deep Blue was the first computer to play chess IBM developed the computer. Another instance is Alpha Go from Google [8]–[12].

2. DISCUSSION

AI has applications in countering money laundering as well (AML). To expand their illicit wealth, money launderers conceal their activities. This is unlawful and sufficiently carefully recorded to provide the appearance of legally earned cash. Worldwide, the banking sector is switching to artificial AML detection from traditional intelligence-based systems. An AI system for detecting AML can spot patterns that defaulters are using. A technique for verifying cheque signatures based on artificial intelligence has been presented. In the suggested system, getting the signature is the first step image. Actual and fake signatures in the proposed work of 10 photos of people were utilized to train the neural network. Features from the photograph are chosen, including moment invariants, histograms, colour-dominant stroke, and GLCM. Then, the image's features that were extracted are utilized to prepare the artificial neural network for use, as well as testing.

The suggested system is quicker because in comparison to current verification techniques. The idea of processing natural language has been investigated. Artificial intelligence is used in a variety of ways, including natural language processing. Natural speech Processing is carried out to examine and comprehend the human computer-generated language the procedures in NLP are Morphological, syntactic, and semantic analysis, integration of discourse, and pragmatics analysis. The exchange of goods and services through the Internet is known as electronic commerce or e-commerce. Another phrase that is occasionally used in location for e-commerce. Examples of online stores are infibeam.com, eBay, flip kart, etc. E-Commerce offers special features for non-cash payments, round-the-clock availability of services, and increased sales. As stated by a Silicon Valley venture capital firm.

People might benefit from virtual personal shoppers to help them make informed decisions about their purchases. Flipkart, for instance, has developed a messaging service called Ping. Up until now, Ping has worked as a retail assistant closure in 2016. It used artificial energy. Intelligence to aid clients in fast locating they were looking for certain things. The home assistant by Amazon, a virtual assistant with artificial intelligence is Alexa helper personal shopper. It offers the client a current buying environment and merely requires verification to process the order using your vocal pattern. Another illustration is Mona is the shopping helper. Mona is a synthetic intelligent smartphone assistant for shopping and offers the client a knowledgeable helper. Mona discovers based on the fashions a customer prefers, his best shopping location and the products he prefers. Figure 2 illustrates the types of E-Commerce.

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11, Iss 4, April 2022

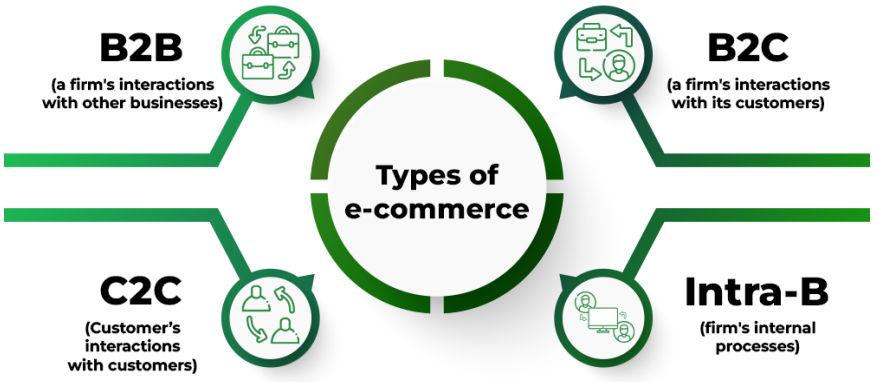

Figure 2: Illustrates the types of E-Commerce [Geeks For Geeks].

A software agent with expertise in both technical and business support services is an e-commerce virtual assistant. It can also carry out duties or provide services for a person. The virtual assistant is also referred to as a "Chatbot" assistant. Lenovo recently also revealed it's a virtual helper to rival Google Now and Cortana. The CAVA assistant uses deep learning that is supported by AI. It offers voice and face recognition capabilities. Consumer trust in Internet shopping has increasingly dependent on customer feedback. In a recent study by Dimensional Research, 90% of participants said the importance of favourable online evaluations on their purchasing decisions. But bogus reviews can influence a buyer's decision. AI can be employed to solve this issue. Amazon uses AI to thwart phony product reviews. The AI machine-learning algorithm on Amazon makes sure that only authenticated customer reviews of purchases are promoted. It particularly Favors reviews that are identified by other users as useful.

3. CONCLUSION

The e-commerce industry is changing as a result of artificial intelligence (AI), which enables enterprises to analyse vast volumes of consumer information to learn important details about consumer needs as well as behaviours. This enables businesses to develop more individualised as well as pertinent purchasing experiences that will boost client happiness and loyalty as well as propel company expansion. One of the strongest applications of AI for e-commerce businesses is customization. This study offers an analysis of AI in the E-Commerce sector. Through analysing consumer information, AI algorithms may suggest items that are likely to be appealing to certain consumers depending on their past decisions, browser history, and similar behaviours. This allows companies to personalise the purchasing process for every client. AI may help streamline processes like order fulfilment, customer support, and inventory management, giving merchants more time to concentrate on other elements of their businesses. Better search outcomes can be delivered by AI-based searching engines, enhancing user experience. Virtual assistants including chatbots driven by AI can offer clients prompt, effective service, enhancing customer service in general.

REFERENCES:

[1] S. Girdher, "Role of Artificial Intelligence in Transforming E-commerce Sector," *Res. Rev. Journals*, 2019.

[2] P. G. Gidh, "A Multi-Dimensional Research Study in E-Commerce to Capture Consumer Expectations," *Int. J. Res. Appl. Sci. Eng. Technol.*, 2020, doi: 10.22214/ijraset.2020.32169.

[3] S. R. Salkuti, "A survey of big data and machine learning," *Int. J. Electr. Comput. Eng.*, 2020, doi: 10.11591/ijece.v10i1.pp575-580.

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11, Iss 4, April 2022

[4] B. P. Bosamia, "Competency of Artificial Intelligence (Ai) in E-Shopping Firm," *Tathapi (UGC Care Journal)*, 2020.

[5] M. H. Chen, "The Analysis of Model for Electronic Commerce - Artificial Intelligent," *J. Asian Bus. Strateg.*, 2018, doi: 10.18488/journal.1006/2017.7.2/1006.2.39.43.

[6] N. L. Ping, A. R. B. C. Hussin, and N. B. M. Ali, "Constructs for artificial intelligence customer service in E-commerce," in *International Conference on Research and Innovation in Information Systems, ICRIIS*, 2019. doi: 10.1109/ICRIIS48246.2019.9073486.

[7] S. Patil, V. Nemade, and P. K. Soni, "Predictive Modelling for Credit Card Fraud Detection Using Data Analytics," in *Procedia Computer Science*, 2018. doi: 10.1016/j.procs.2018.05.199.

[8] K. Oh, "The roles of data analytics in the fashion industry," *J. Text. Eng. Fash. Technol.*, 2020, doi: 10.15406/jteft.2020.06.00237.

[9] J. Skrebeca, P. Kalniete, J. Goldbergs, L. Pitkevica, D. Tihomirova, and A. Romanovs, "Modern Development Trends of Chatbots Using Artificial Intelligence (AI)," in *ITMS 2021 - 62nd International Scientific Conference on Information Technology and Management Science of Riga Technical University, Proceedings*, 2021. doi: 10.1109/ITMS52826.2021.9615258.

[10] R. Thiebaut, "AI Revolution: How Data Can Identify and Shape Consumer Behavior in Ecommerce," *SSRN Electron. J.*, 2018, doi: 10.2139/ssrn.3180562.

[11] P. Kulkarni, A. Mahabaleshwarkar, M. Kulkarni, N. Sirsikar, and K. Gadgil, "Conversational AI: An overview of methodologies, applications future scope," in *Proceedings - 2019 5th International Conference on Computing, Communication Control and Automation, ICCUBEA 2019*, 2019. doi: 10.1109/ICCUBEA47591.2019.9129347.

[12] K. Deepika, V. Tilekya, J. Mamatha, and T. Subetha, "Jollity Chatbot- A contextual AI Assistant," in *Proceedings of the 3rd International Conference on Smart Systems and Inventive Technology, ICSSIT 2020*, 2020. doi: 10.1109/ICSSIT48917.2020.9214076.