ARTIFICIAL INTELLIGENCE IN E-COMMERCE: A LITERATURE REVIEW

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Abstract

With the development of information and conversation technologies, artificial intelligence is turning into increasingly popular. The main goal of businesses in these days's e-trade international is to persuade customer behavior in choose of positive merchandise and brands. The software of synthetic intelligence as an innovative device inside the discipline of e-trade may additionally appear as a nice leap forward. The paper specializes in the description of the essence of e-trade and artificial intelligence and their benefits. The goal is also to assess the importance of synthetic intelligence and its use inside the context of e-trade based totally on available research in this trouble.

Keywords: Artificial intelligence, e-commerce, Literature review, Software,

INTRODUCTION

Electronic commerce may be defined as sports or offerings related to shopping for and selling products or services over the Internet. Firms have an increasing number of bask in e-commerce due to clients' growing demand for online offerings and their capability to create a competitive benefit. However, firms war with this e-business practice because of its integration with rapidly evolving, without problems adopted, and fantastically less expensive facts technology. This

forces firms to constantly adapt their enterprise models to changing patron wishes. Artificial intelligence (AI) is the latest such generation. It is remodelling e-trade through its potential to "effectively interpret outside statistics, to study from such facts, and to apply the ones learnings to gain particular desires and tasks via bendy adaptation". Depending on the context, AI might be a gadget, a tool, a method, or a set of rules. It creates opportunities for companies to gain a competitive benefit by using massive data to uniquely meet their customers' needs thru personalized offerings.

REVIEW OF LITERATURE

Artificial neural network based software cost estimation technique has been proposed. It uses ANFIS to improve the precision of software cost estimation. The data used is the DESHARNAIS data set from PROMISE Software Engineering Repository. The proposed model performance has been analyzed in terms of MAE, Correlation Coefficient, and RMSE.ANFIS model has outperformed than regression model with the RMSE value of 780.97 against 3007.05 of the regression model. (2016) Artificial intelligence in robotics. In new plagiarism technique has been proposed based on K-NN method. This method clusters the string and matches words with neighbors. A counter is used to the count number of the string matched in compared files. Firstly, the file is compared with the existing set of files. The set of words which are matched are selected as copied words and showed as output. This technique finds the frequency of every matched copied word in the file. It also calculates the percentage of matched copied words.
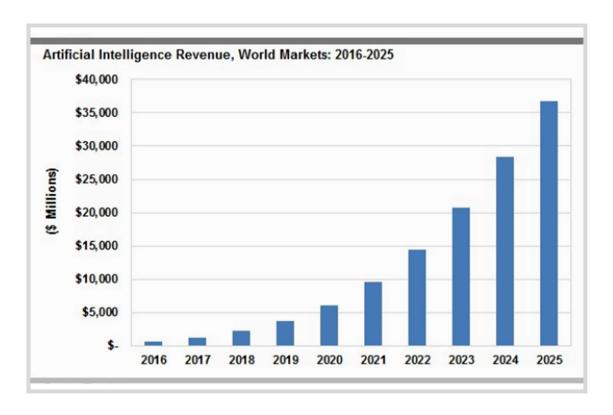
Limited memory is the systems that can use past encounters to educate future choices. A portion of the basic leadership works in self-driving vehicles are structured along these lines. Perceptions advise activities occurring not long from now, for example, a vehicle moving to another lane. These perceptions are not stored for all time. (TechTarget 2018a.) Theory of mind is the phenomenon to be able to understand that others have their very own convictions, wants, and expectations that affect the choices they make. Although there is a lot of improvement in this area, this sort of AI does not yet exist. (Kumar 2018.) Self-awareness is artificial frameworks have a feeling of self, have cognizance. Machines with mindfulness comprehend their present state and can utilize the data to derive what others are feeling. Like the theory of mind, this kind of AI does not yet exist. (TechTarget 2018)

SCOPE OF THE STUDY

The scope of the study is to find out impact of artificial intelligence in e-commerce. A sincere attempt has been made to include all the aspect relating to the study. For this purpose analysis of artificial intelligence in ecommerce how to impact now a days.

ARTIFICIAL INTELLIGENCE

Using the intelligent ability of AI to predict outcomes reliably and accurately, the established eCommerce titan corporations such as Alibaba Holding Group Limited and Amazon Inc. have continued to record astronomical turnovers in the past years that have picked the interests of various academics to want to establish the driving component of that AI success. According to Mohapatra, the underlying component of AI that has propelled the success of these two giants, as well as upcoming eCommerce retailers, is its ability to identify and predict patterns of customer purchase behavior.

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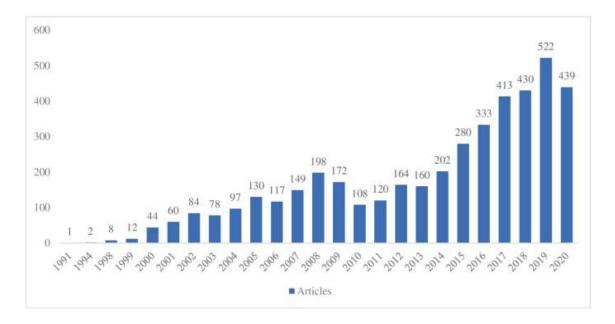**Artificial Intelligence Revenue, World Markets: 2016-2025**

ELECTRONIC COMMERCE

Today it is possible to buy anything from Electronic Commerce with 2-3 steps. There are different websites for e-commerce, such as Flipkart, eBay, Amazon, Myntra, etc. For some form of business process management or knowledge sharing, it uses the internet and modern communication technologies. It bangs all types of business operations, not only just the externally focused business processes like network marketing, UPI transaction, wallet payment, logistics and delivery, but also it bangs upthe internal business. EDI (Electronic Data Exchange), Internet, Intranet, E-mail, database, Software creation technologies, etc. are the core technology pillars of e-commerce.
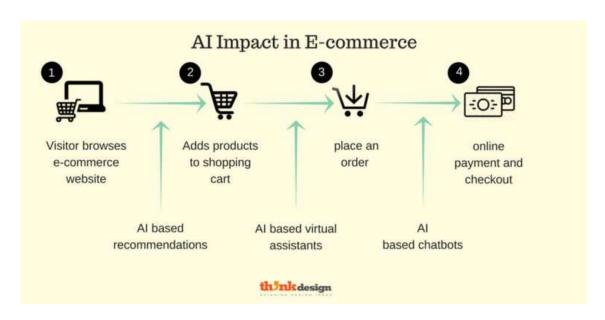
E-COMMERCE AND ARTIFICIAL INTELLIGENCE

E-trade and Artificial Intelligence The contemporary records age bring along new possibilities, software program, and technological improvements usable in marketing and buying. New technologies force groups to be extra creative. Technologies help boom the performance, nice, and price-effectiveness of services provided by means of groups. Contemporary creativity is based totally mostly at the development of the so-referred to as data and communication technology, that have a chief impact on the improvement of the commercial enterprise environment. The effectiveness of records and communique technologies depends on several elements, including funding in human capital and the ideal mixture of e-commerce solutions. One zone wherein the digital transition and importance of e-trade are mainly pronounced is

retail, where digital equipment, which includes Websites, update (to a sure volume), or supplement physical trade.

ECOMMERCE CHANGED THE BUYERS' MIND-SET

As opposed to the retail shopping experience an average customer in ecommerce has a shorter attention span. The customer is not on ecommerce platform with intent to purchase every time. A new phenomenon of shopping cart abandonment started with ecommerce. A major part of customer care starts after the order is placed as opposed to brick and mortar model. Those were some of the basics about an average shopper that uses ecommerce but the industry must adapt to the challenges faced after applying Artificial Intelligence algorithms to predict consumer buying patterns. Here is a possible layout explaining the impact of AI in Ecommerce.

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CLASSIFICATIONS OF ARTIFICIAL INTELLIGENCE

According to Bonden A. Margaret (2016), artificial intelligence has two major targets: technological and scientific. In the first aim, artificial intelligence has used to get useful things done and the other one is that using artificial intelligence in both models and concepts to solve questions about humans and other living things. (Bonden 2016.) Technological artificial intelligence includes Narrow artificial intelligence and General artificial intelligence. Narrow artificial intelligence is intelligent systems what people can see around in computers. It focuses on solving one problem that has been learned and taught to handle some specific tasks without being programmed obviously how to do. This kind of machine insight is clear in the vision-acknowledgment frameworks on self-driving vehicles, in the voice recognition of Siri virtual function on the iPhone Apple, and in the suggestion motors, the recommend items customers may depend on what they purchased previously. There are countless applications for narrow artificial intelligence such as reacting to basic client benefit inquiries, coordinating with other clever frameworks to do undertakings like booking a lodging at an appropriate time and area, helping radiologists to spot potential tumors in X-rays, hailing unseemly substance web-based, identifying mileage in lifts from information accumulated by Internet of Things, the rundown continues endlessly. (Heath 2018.)

APPLICATION OF ARTIFICIAL INTELLIGENCE

Intelligence technology is emergingvery fast with the advancement of science and technology and is transforming the human being daily lifestyle, mainlyin e-commerce sector.The use of artificial intelligence application in the e-commerce area can be seen in the following aspects:

Real-time product targeting E-Commerce

From a long time in this competition of firms each and every companies seek to provide their clients with the best online shopping experience by supplying customers with a hassle-free way to find the items they are looking for. Machine learning can continue to provide online shoppers with product reviews, discounts and deals to be customized.

Visual search of Related Images

Instead of text, AI can help visitors to e-commerce websites search by image and compare related items to unique images. Pinterest's visual search, which requires users to pick an object in every photograph online, is an example of visual search and then requests Pinterest to view related objects using image recognition tools.

Voice Searching Application

In online marketing, Voice Search is increasingly replacing text-based search. The precision of speech recognition is enhanced than ever. Almost 70% of applications are natural or are rendered for Google Assistant in a conversational language. Some mobile devices with voice-controlled personal assistants are the Siri-powered Apple Home-Pod. A further example is Amazon's Alexa-powered Echo. Voice-based Alexa search can be used to position an order from Amazon to be delivered. The key feature of the AI assistant chatbot server is to respond to consumer requests automatically, address basic voice commands, and use a native language processing system to provide product recommendations. Machine learning skills for group chats on commercial platforms and mobile.

AI IS BRINGING CHANGE TO THE ECOMMERCE INDUSTRY

Artificial intelligence isn't just a novel technology implemented for its "cool factor." Implementing AI has the potential to impact any number of business functions across your organization.

To understand how it could impact your business, it helps to have an understanding of the components of artificial intelligence.

The definition of AI is broad, and encompasses data mining, natural language processing, and machine learning.

- Data mining refers to the gathering of both current and historical data to inform predictions.
- Natural language processing focuses on human-computer interaction and how computers interpret natural human language.
- Machine learning concerns using a collection of algorithms to apply past experience or provide examples to solve a problem. Deep learning "involves layering algorithms in an effort to gain greater understanding of the data."

Over the past couple of years, AI technology has matured and become a powerful tool to boost sales and optimize operations. Even many small ecommerce businesses are using technology with some kind of AI capability.

BENEFITS OF USING ARTIFICIAL INTELLIGENCE IN ECOMMERCE COMPANIES

Amazon has long recognized the benefits of artificial intelligence and related technologies. The behemoth ecommerce company uses machine learning to improve product selection and user experience and to optimize logistics.

A recent publication from McKinsey & Company and the Retail Industry Leaders Association named seven imperatives for rethinking retail in 2021, and every single one could in some way be supported by some type of AI-informed technology.

1. More targeted marketing and advertising.

Personalization is a top priority, according to surveyed retailers, but only 15% say they've fully implemented personalization across channels. Stand out from the crowd with a more personalized message and have one-to-one conversations with your customers.

Advances in AI and machine learning have enabled deep personalization techniques to customize content by user. By analyzing big data from purchase histories and other customer interactions, you can zero in on what your customers really want and deliver the message that will most resonate.

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2. Increased customer retention.

Delivering targeted marketing and advertising messages personalized for their customers can increase retention. McKinsey omnichannel personalization research indicated there's a 10-15% uplift potential in revenue and retention from omnichannel personalization strategies.

The report reads: "A critical element of personalization is building better data and insights on customers, an asset that also generates additional value across the value chain. … Our research suggests the ROI for personalization will quickly outpace that of traditional mass marketing."

3. Seamless automation.

The goal of automation is to accomplish a task with as little human intervention as possible. That can mean anything from scheduling emails in a CRM or marketing tool, using Zapier to automate tasks or leveraging advanced technology to help with hiring.

In the context of future ecommerce trends, however, some of the most commonly talked about today are robotics and machine learning.

AI can play a big role in helping you automate the repetitive tasks that keep your online store functioning. With AI, you can automate things like product recommendations, loyalty discounts, low-level support, and more.

4. Efficient sales process.

Using AI can help you create a more efficient sales process by gathering data about your customers, automate follow-up abandoned cart inquiries, and more. You can help move customers through the funnel by having them engage with chatbots for simple questions.

AI USE CASES IN ECOMMERCE

There are plenty of use cases in ecommerce for AI, and you're probably familiar with a lot of them — you just might not know that the technology they're built on is actually related to AI. Here are six of the most common:

1. Personalized product recommendations.
2. Pricing optimization.
3. Enhanced customer service.
4. Customer segmentation.
5. Smart logistics.
6. Sales and demand forecasting.

1. Personalized product recommendations.

It's easier than ever to collect and process customer data about their online shopping experience. Artificial intelligence is being used to offer personalized product recommendations based on past customer behavior and lookalike customers.

Websites that recommend items you might like based on previous purchases use machine learning to analyze your purchase history. Retailers rely on machine learning to capture data, analyze it, and use it to deliver a personalized experience, implement a marketing campaign, optimize pricing, and generate customer insights.

Over time, machine learning will require less and less involvement from data scientists for everyday types of applications in ecommerce companies.

2. Pricing optimization.

AI-enabled dynamic pricing is a strategy of changing your product price based on supply and demand. With access to the right data, today's tools can predict when and what to discount, dynamically calculating the minimum discount necessary for the sale.

3. Enhanced customer service.

With virtual assistants and chatbot technology, you can deliver the appearance of higher touch customer support. While these bots aren't completely self-reliant, they can facilitate simple transactions, leaving live support agents able to focus on more complex issues.

Virtual agents also have the advantage of being available 24/7, so low-level questions and issues can be addressed at any time of day, without making your customer wait.

4. Customer segmentation.

Access to more business and customer data and processing power is enabling ecommerce operators to understand their customers and identify new trends better than ever.

In an insight from Accenture, they write, "AI systems can explore highly complex and varied options for customer engagement very quickly, and continuously optimize their performance as more data becomes available. This means marketers can set parameters and allow the AI to optimize and learn to achieve precision."

5. Smart logistics.

According to a report from Emerging Tech Brew, "Machine learning's predictive powers shine in logistics, helping to forecast transit times, demand levels, and shipment delays."

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Smart logistics or intelligent logistics, is all about using real-time information through sensors, RFID tags, and the like, for inventory management and to better forecast demand. Machine learning systems become smarter over time to build better predictions for their supply chain and logistics functions.

6. Sales and demand forecasting.

Particularly in a world during and after COVID-19, you'll want to plan your inventory on both real-time and historical data. Artificial intelligence can help you do just that. A recent McKinsey report suggests that investment in real-time customer analytics will continue to be important to monitor and react to shifts in consumer demand that can be harnessed for price optimization or targeted marketing.

CONCLUSION

India is the fastest-growing e-commerce region, according to Forrester. AI would have a huge influence on the way clients are drawn and retained by e-commerce firms. AI in Electronic Commerce brings new innovations, It also helps in IT sector employment to build and manage the applications and technologies that will control such

AI algorithms. E-commerce giants are currently focusing aggressively on artificial intelligence technologies and optimizing their trading channels to improve competition. Intelligent robot support campaign from Alibaba and Amazon. E-commerce giants have established their own goods in the hardware market as well. Artificial intelligence strategies have joined this fast-paced course, with mature technologies, by being more commonly used, having a rising effect on variables such as user engagement and e-commerce sales satisfaction for consumers. As time goes by, the driving force behind the e-commerce transformation would be artificial intelligence. E-commerce will have a greater hope for success with the help of artificial intelligence technologies, consistent with the establishment of improved control of consumer relationships and sales marketing, narrowing the gap between customization and privacy.

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