

METHODS OF USING AI IN E-COMMERCE FOR PERSONALIZED RECOMMENDATIONS AND DEMAND FORECASTING

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Abstract

The article explores the use of artificial intelligence in e-commerce for personalized recommendations and demand forecasting.

Keywords: Artificial Intelligence, e-commerce, personalized recommendations, demand forecasting.

Анотація

У статті досліджується використання штучного інтелекту в електронній торгівлі для персоналізації рекомендацій та прогнозування попиту.

Ключові слова: штучний інтелект, електронна торгівля, персоналізація, прогнозування попиту.

Introduction

As the e-commerce industry continues to advance rapidly, businesses are witnessing a multitude of growth opportunities. With the intensifying progression of the industry, businesses see constantly expanding growth opportunities. SaaS, AR/VR, ERPs, headless CMSs, virtual shopping, etc., will make your head spin and question whether these options are worth their while. Therefore, e-commerce platforms aim to establish a solid foundation and make informed decisions that are both justified and beneficial. This ensures that they can leverage these advancements and embrace the transformative power of artificial intelligence in revolutionizing product recommendations.

Basics

To achieve personalized recommendations, AI algorithms analyze user behavior, purchase history, and preferences to understand individual preferences and make relevant product suggestions. Techniques such as collaborative filtering, content-based filtering, and hybrid approaches are commonly employed to create personalized recommendation systems. These algorithms learn from user feedback and continuously refine their recommendations, resulting in a more tailored shopping experience.

The integration of AI in e-commerce enables personalized recommendations, boosting customer satisfaction, retention, and revenue. By analyzing user behavior and preferences, AI algorithms suggest relevant products, creating a tailored shopping experience that resonates with customers and enhances their engagement.

AI-powered demand forecasting in e-commerce optimizes inventory management and resource allocation. By analyzing sales data, market trends, and external factors, AI models provide accurate insights into future demand, enabling companies to avoid stockouts, overstocks, and associated costs while improving operational efficiency.

Demand and sales forecasting are of paramount importance in retail. Without this tool, companies encounter disruption of the inventory balance, through ordering too much or not enough products for a certain period of time. In the case of surplus, a company is forced to offer discounts to sell products. Otherwise, it may face inventory issues. A shortage, in turn, results in lost profits. However, these problems can be solved by applying

demand and sales forecasting to increase the return on inventory and determine the intention of future consumers to buy a specific product at a specific price.

The utilization of AI in e-commerce for personalized recommendations and demand forecasting yields several benefits. Personalized recommendations enhance customer satisfaction by presenting relevant products, increasing the likelihood of purchase and customer retention. By understanding customer preferences, businesses can optimize their product offerings and marketing campaigns, resulting in higher conversion rates and revenue.

AI demand forecasting has made this a real possibility for companies willing to invest in machine learning and Decision Intelligence solutions. Traditionally, companies use forecasting models like ARIMA or Auto Regressive Integrated Moving Average to predict product demand, but these methods take a lot of manual lifting and leave room for human error.

Conclusion

The integration of AI in e-commerce offers significant advantages in terms of personalized recommendations and demand forecasting. By leveraging AI algorithms and techniques, businesses can enhance customer satisfaction, increase sales, and optimize their operations. The continuous improvement of AI models through machine learning enables e-commerce platforms to adapt to changing customer preferences and market trends. As the field of AI continues to advance, further research and innovation in personalized recommendations and demand forecasting can drive the future growth of e-commerce.

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