


Chapter 14

Leveraging Deep Learning for Personalized Customer Experience Management

Usharani Bhimavarapu

 <https://orcid.org/0000-0002-0246-1420>

Department of Computer Science and Engineering, Koneru Lakshmaiah Education Foundation, Vaddeswaram, India

ABSTRACT

Since the dawn of the digital era, customer experience has been among the key pillars on which companies must attain competitiveness and win over customers. This research explores innovative methods of building customer experiences through new technologies, i.e., machine learning and deep learning algorithms. Utilizing Convolutional Neural Networks (CNNs) as part of its rollout, the technique brings multimodal streams of data, such as social media, web activity, and customer reviews, together in an attempt to provide relevant insights. The primary elements of the technique involve feature selection with Ant Colony Optimization (ACO), data preprocessing, and applications of deep CNN architectures. Such approaches allow companies to recognize deep-rooted customer desires and provide tailored real-time suggestions, thereby enhancing satisfaction and interaction. This article outlines the disruptive potential of AI-based approaches to defining the next-generation customer experience management platform.

DOI: 10.4018/979-8-3373-1882-0.ch014

INTRODUCTION

With the rapid development of the digital age, business organizations are constantly on the lookout for new ways to improve the customer experience. This is driven largely by the rapid uptake of digital technologies like AI, machine learning, and IoT that present fresh ways to connect with customers. Organizations are now able to gather and analyze vast quantities of customer information in real-time, allowing them to know what specific behavior and preferences they have. Having such data at their fingertips, businesses can customize offerings to meet customers' needs in a better way, delivering customized and efficient experiences. Furthermore, digital technologies enable businesses to engage customers via various platforms, enriching the experience even more by offering convenience and availability.

One of the best means of enhancing customer experience in the era of digital technology is utilizing AI-driven chatbots. These are computer programs that can deliver instant customer service, answer questions, and troubleshoot around the clock. AI-powered chatbots do not only offer faster customer service but also allow enterprises to service more customer queries without sacrificing on quality. Such systems become smarter and better with time, gaining experience. Companies can therefore reduce response times exponentially, improve customer satisfaction, and become more loyal. AI chatbots also don't come with a high maintenance cost, enabling businesses to scale up without a multiplication of human resources. The other crucial strategy in improving customer experience is the use of omnichannel communication.

Customers today also demand consistency across different touch points, whether engaging with a company on a site, social media, mobile app, or shop. Omnichannel strategies allow companies to provide a unified experience, wherein customers can flow through various channels without losing context. A customer, for example, may begin buying on a mobile application, ask through live chat, and finalize the buy in a physical store. The success of omnichannel strategies lies in consolidating all the communication platforms into one platform that monitors customer interactions, likes, and history. The second such important means to enhance customer experience in the digital sphere is personalization.

Advanced data-driven analytics and insights allow enterprises to provide highly customized experiences based on individual preferences. Personalized recommendations, first-name promotions, and customized messages not only provide the customer with a special touch but also improve their experience. For instance, shopping websites online can recommend products on the basis of browsing history, and media streaming viewing websites recommend media on the basis of viewing history. Personalized experience creates intimate links among consumers and corporations,

26 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/leveraging-deep-learning-for-personalized-customer-experience-management/386287

Related Content

Information and Communication Technologies in the Healthcare: Future Trends for Project Success

Jorge Gomes and Mário Romão (2020). *Data Analytics in Medicine: Concepts, Methodologies, Tools, and Applications* (pp. 2018-2032).

www.irma-international.org/chapter/information-and-communication-technologies-in-the-healthcare/243207

Conceptual View on Healthcare Digitalization: An Extended Thematic Analysis

Robert Furda and Michal Gregus (2017). *International Journal of Big Data and Analytics in Healthcare* (pp. 35-54).

www.irma-international.org/article/conceptual-view-on-healthcare-digitalization/197440

An Experimental Data of Lithium-Ion Battery Time Series Analysis: ARIMA and SECTRAL Analysis

Liming Xie (2021). *International Journal of Data Analytics* (pp. 1-26).

www.irma-international.org/article/an-experimental-data-of-lithium-ion-battery-time-series-analysis/285465

Organizational Performance-Design Process: A Discrete-Events Simulation Approach

Hossein Arsham and Shaya Sheikh (2015). *Handbook of Research on Organizational Transformations through Big Data Analytics* (pp. 54-84).

www.irma-international.org/chapter/organizational-performance-design-process/122749

A Novel Approach for Tenuous Community Detection in Social Networks

Muhammad Asif, Hassan Raza and Muhammad Imran Manzoor (2022). *International Journal of Data Analytics* (pp. 1-12).

www.irma-international.org/article/a-novel-approach-for-tenuous-community-detection-in-social-networks/297518