Chapter 4

Business Analysis During the Pandemic Crisis Using Deep Learning Models

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ABSTRACT

This chapter aims to investigate pandemic crisis in the various business fields like real estate, restaurants, gold, and the stock market. The importance of deep learning models is to analyse the business data for future predictions to overcome the crisis. Most of the recent research articles are published on intelligent business models in sustainable development and predicting the growth rate after the pandemic crisis. This clear study will be presented based on all reputed journal articles and information from business magazines on the various business domains. Comparison of best intelligent models in business data analysis will be done to transform the business operations and the global economy. Different deep learning applications in business data analysis will be addressed. The deep learning models are investigated which are applied on descriptive, predictive, and prescriptive business analytics.

INTRODUCTION

Artificial Intelligence (AI) has been emerging technology for the past two decades in business intelligence. Researchers and engineers have contributed a lot of innovations for developing smarter and cognitive applications. The vast volume of data is produced through the internet by many e-commerce websites, and the processing and storage challenges are addressed and resolved using the Bigdata concepts explained in Rajkumar and Sudheer (2016), Sudheer, Devulapalli, and Krishnan (2019), Sudheer and Lakshmi (2015). The processing advancements that evolved in recent years led to the use of more AI-based methods to apply predictive and descriptive analytics. The primary issue in improving the accuracy of predictions using AI algorithms is the availability of training data. Since the technologies such as the cloud and Internet Of things (IOT) are connected to all fields, more data can be gathered and accessed faster. However, labeling and grouping the unstructured data still become a tedious task Sankar et al. (2021), Sankar et al. (2022). Knowledge representation and pattern recognition tools had used to resolve these issues. Especially in the business field, decision-making and recommendation systems play a vital role based on previous experiences. The literature of the chapter had discussed various AI-based techniques applied in different business applications and their impact during the COVID-19 pandemic. Figure 1 Explains that recent tools available for data extraction, data pre-processing, data analysis and pattern recognition and data visualization steps.

The rest of chapter is organized as section 1 explained introduction, section 2 is about literature survey, section 3 explains comparison of AI models and section 4 is conclusions.

LITERATURE SURVEY

The literature study section investigated the recent techniques developed in various business sectors such as restaurants, real estate, banking, stock market and e-learning. It will discuss about different AI methods applied on various data sources and their advantages.

Food Processing Industry

Luo, Yi, and Xu have studied deep learning models to analyze the reviews of the restaurant industry in the period of the COVID-19 pandemic. Total 1,12,412 reviews from January to June of the year 2020 are considered as a dataset to develop prediction models. The features such as service, food, place, and experience are analyzed to find the sentiment of the reviews Luo, Yi, and Xu (2021).

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