Chapter 5
Application of Data Analytics in Emerging Fields

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ABSTRACT

Data, which is available in abundance and in accessible forms, if analyzed in an efficient manner, unfolds many patterns and promising solutions. The present world is moving from the information age to the digital age, entering a new era of analytics. Whatever the end user does is recorded and stored. The purpose of data analytics is to make the "best out of waste." Analytics often employs advanced statistical techniques (logistic regression, multivariate regression, time series analysis, etc.) to derive meaning from data. There are essentially two kinds of analytics: 1) descriptive analytics and 2) predictive analytics. Descriptive analytics describes what has happened in the past. Predictive analytics predicts what will happen in the future.

INTRODUCTION

IDC predicts that by 2025, the total amount of digital data created worldwide will rise to 175 zettabytes (from approximately 40 zettabytes in 2019), ballooned by the growing number of devices and sensors. The mission of this chapter is to make a clear understanding of why Analytics? Where to use Analytics? Outcome of Analytics?

This Chapter provides in-depth foundation level knowledge that enables reader of this chapter to efficiently provide grounding in basic and advanced methods to Analytics and tools, including MapReduce and Hadoop in different field of study. The rate in which data is exponentially growing has

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led to the evolvement of many technologies to better utilize this data for timely and accurate decision making with the help of Analytics. This chapter adds a comprehensive coverage of Analytic algorithms specially meant for analyzing data at an in-depth level. Decision trees, Support Vector machines and Neural networks are considered to be highly effective in analyzing complex data for different domain. Variety of solutions can be provided for storing, managing, accessing, protecting, securing, sharing and optimizing the information once analytics are properly fitted. Different Analytics tools are used some are open source and some are paid. Paid Tools such as SAS, WPS, MS Excel, Tableau, Pentaho, Statistica, Qlikview, KISSmetrics KISSmetrics,WeKa, BigML. Free Tools such as R, Google Analytics, Hadoop, Python, Spotfire can be used for Analyzing the data.

The following subsection deals with different emerging trends in various fields, along with dataset, tools for processing the data and Analytical methods used. Some source of dataset are kaggle, catalog, etc which is available for public for research.

Information Analytics has a key job in improving your business. Here are 4 primary variables which imply the requirement for Data Analytics:

- **Accumulate Hidden Insights:** Hidden bits of knowledge from information are assembled and after that broke down as for business necessities.
- **Create Reports**: Reports are produced from the information and are passed on to the separate groups and people to manage further activities for a skyscraper in business.
- **Perform Market Analysis:** Market Analysis can be performed to comprehend the qualities and the shortcomings of contenders.
- **Improve Business Requirement:** Analysis of Data enables improving Business to client prerequisites and experience.

LITERATURE REVIEW

The term “Enormous Data” or “Big Data” has as of late been applied to datasets that develop so huge that they become abnormal to work with utilizing customary database the board frameworks. They are informational collections whose size is past the capacity of regularly utilized programming instruments and capacity frameworks to catch, store, oversee, just as procedure the information inside a tolera-ble passed time. Enormous information sizes are continually expanding, as of now running from a couple dozen tera-bytes (TB) to numerous petabytes (PB)(Baltrusaitis et al., 2018; Bent et al., 2001; Bose & Cocke, 2003) of information in a solitary informational collection. Subsequently, a portion of the troubles identified with large information incorporate catch, stockpiling, search, sharing, investigation, and picturing. Today, endeavors are investigating huge volumes of exceptionally nitty gritty information in order to find realities they didn’t know before. Consequently, enormous information investigation is the place progressed systematic strategies are applied on large informational indexes. Examination dependent on huge information tests uncovers and uses business change. Be that as it may, the bigger the arrangement of information, the more troublesome it becomes to oversee. In this segment, we will begin by talking about the qualities of large information, just as its significance. Normally, business advantage can ordinarily be gotten from examining bigger and progressively complex informational indexes that require ongoing or close constant abilities; nonetheless, this prompts a requirement for new information designs, expository strategies, and instruments. In this manner the progressive area will expand the enormous