Big Data, Cloud Computing, and the Challenges of Securing and Protecting User Data

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Abstract

In many facets of contemporary daily life, communication systems are becoming more important. Numerous technologies are developed in this field and help to make people's daily lives better. Big Data (BD) is a term for a technology that was developed via communication networks. Large-scale data sets that are used, transferred, and managed over a network are referred to as "big data." The use of storage space without limitations on its use becomes necessary due to data usage, even large-scale data. This storage capacity is made possible by a technology known as cloud computing (CC). This technology makes reference to a substructure where real-time data processing and storing takes place outside of the user's device.

Index Terms—**Cloud Computing, Big Data, Algorithms, Big Data Applications, Cloud Computing Security.**

I. Introduction

A new term in popular usage, "big data," refers to the unexpectedly quick increase in both structured and unstructured data volume. It is a general term for data sets that are too big or too complicated for standard data processing software. Occasionally, it also targets a specific data set size. Big data accuracy may boost decision-making confidence, and wiser choices may increase operational effectiveness, lower costs, and lower rate of risk [1]. This scope helps us to understand that big data is becoming equally important for the internet and business. This occurs as a result of more information producing analyses that are more accurate [2] [3].

In recent years, a new wave of services built around the concept of "cloud computing" has emerged, offering data and information access from anywhere at any time, thereby reducing or eliminating the need for physical equipment. "Cloud computation" refers to the utilization of software and logistical resources for computing via services that are delivered over the internet. These days, cloud computing services make up one of the biggest global arenas for competition