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# Review of DDoS Attack Detection in Big Data with Cloud using Machine Learning

Publisher: IEEE

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### Abstract



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#### Abstract:

Cloud Computing (CC) is a massive breakthrough in Information Technology (IT) that provides end users to access flexible and virtualized sources at affordable infrastructure cost and management. One of the most significant technologies in the big-data era is the CC Data Centres (DCs). The Distributed Denial of Service (DDoS) attacks are one of the most serious issues when it comes to the privacy of DC. DDoS attacks using Transmission Control Protocol (TCP) traffic are taken into consideration, which are becoming more prevalent but challenging to identify. The DDoS attack is the focus of this study, along with the technique used to prevent it and lessen the vulnerability of the big data server side. The system entails the delivery of packets in the form of DDoS attacks to cloud-based websites and even addresses the real-time prediction of software layer DDoS attacks using various Machine Learning (ML) and Deep Learning (DL) techniques. As a result, it stands apart among numerous hosts. Additionally, the objective of this paper was to offer a succinct introduction to attack detection approaches for early researchers working on cloud-based big data applications. As a result, these approaches are categorised according to how they function, their strengths and shortcomings are reviewed, and finally, several research papers that used each method are examined.

Published in: 2023 2nd International Conference on Automation, Computing and Renewable Systems (ICACRS)



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**Date of Conference:** 11-13 December 2023

**DOI:** 10.1109/ICACRS58579.2023.10405296

**Date Added to IEEE Xplore:** 26 January 2024

**Publisher:** IEEE

**► ISBN Information:**

**Conference Location:** Pudukkottai, India

### ☰ Contents

#### I. Introduction

The term “cloud computing” is a fantastic way to describe the centralization of several computer services on a single server. Data and programmes are being transferred to the “cloud” from desktop and laptop computers. The “pay as you go” and low-cost services offered by cloud computing make it a fierce rival in the IT industry. Data has been moved into the cloud by all significant businesses and industries. By offering services with the least number of resources, the shortest amount of time, and the least amount of work, the cloud computing industry has introduced several concerns with time, effort, and cost. Although cloud computing offers a variety of services to its consumers, IaaS, PaaS, and SaaS are the three most useful and often used services. Additionally, cloud computing has another feature, which is depicted in Figure 1. Everything that makes life easier for humans inevitably has drawbacks. Due to the enormous volume of data stored on the cloud, security issues are becoming more prevalent.

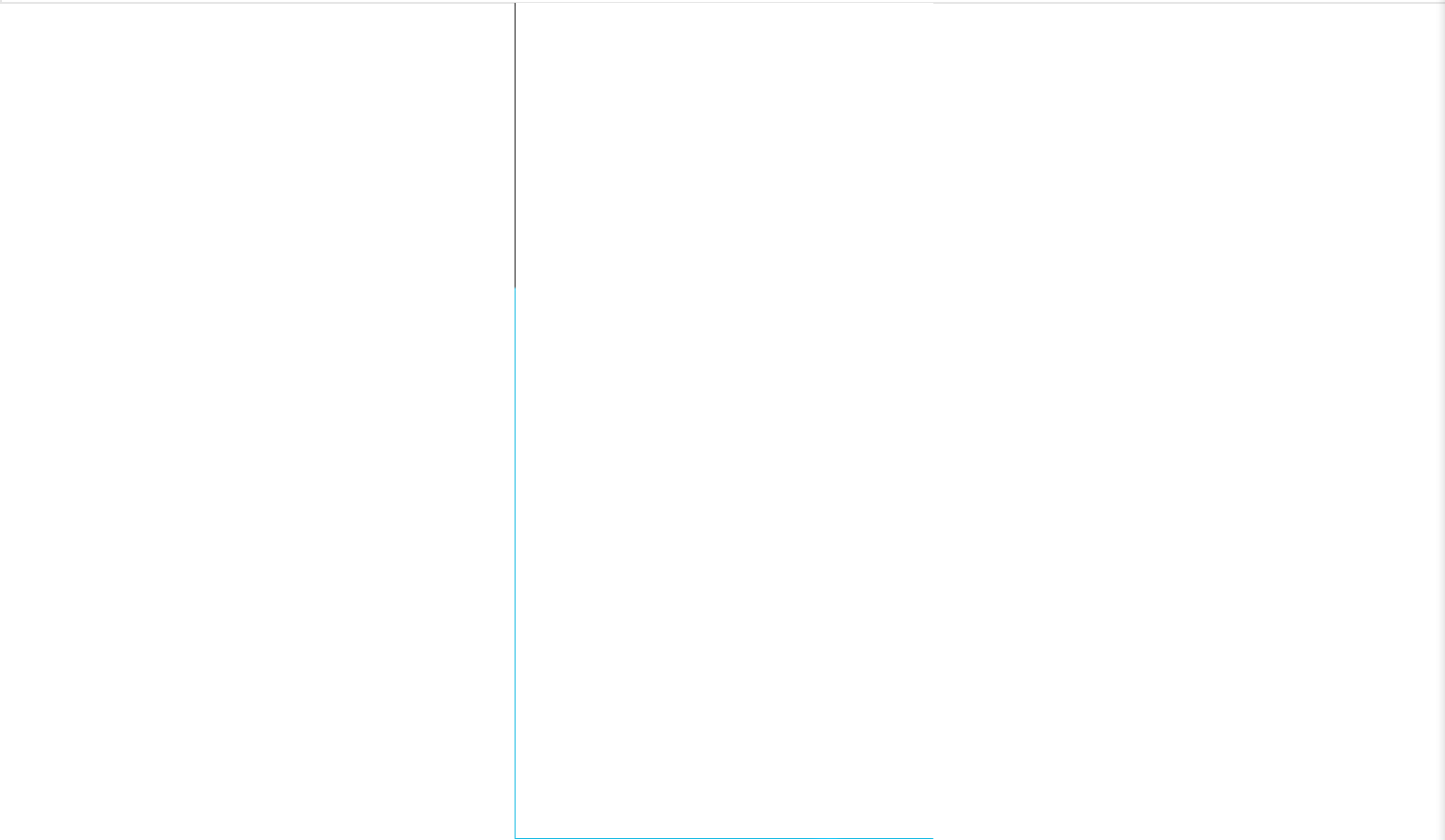
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