Chapter 8
A Blockchain-Trusted Scheme Based on Multimedia Content Protection

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ABSTRACT

There are two types of content on the blockchain: centralized and decentralized. On centralized video platforms, the platform owner controls most of the content uploaded, rather than the creator. However, some content creators post low-quality content in exchange for free cryptocurrencies, creating a cryptocurrency algorithm that demotivates other content creators. In contrast, decentralized blockchain-based video platforms aim to lessen ad pressure and eliminate intermediaries. On video platforms, copyright violations and the unauthorized dissemination of protected information are also significant issues. Copyright protection, illegitimate access restriction, and legitimate dissemination of video files are necessary to guarantee that authors' original output is appropriately compensated.

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INTRODUCTION

Many media-sharing services have been developed due to the internet's rapid expansion. There are various issues with media distribution. Plagiarism and unauthorized dissemination are made simple to do since media copies are simple to make and can be simply manipulated. Furthermore, because the copyright issue is so serious, a centralized management system cannot resolve it. Utilizing Blockchain technology, these issues are solved.

The central server and the reliability of each network participant are not required by this technique. Transactions are referred to as data on the blockchain. Blockchain is a shared and distributed database. In the blockchain, blocks that contain one or more transactions are chained to each other. A unanimous decision from all the participants is required to add a new block. To defend the media, it is necessary to use blockchain technology, which has advantages like transparency, security, safety, and decentralization (Yaga et al. 2019).

Blockchain technology has been discovered to be an effective method of transaction verification. This can be used to create a system that distributes multimedia content decentralized and transparently. It consists of cryptographically signed blocks that are connected by a distributed digital record. The links between each block are cryptographically established after validation and consensus. Existing blocks become harder to edit as new blocks are introduced (building tamper resistance). Recently, blockchain technology has gained a lot of attention because of its range of applications, such as in finance, health care, supply-chain management, and intrusion detection. Several applications for copyright and intellectual property protection have been developed with its help. There are numerous online multimedia applications based on blockchain technology, including those in the music and advertising industries, healthcare, social media, and content delivery networks. Blockchain technology has transparency, decentralization, a reliable database, collective maintenance, trackability, security, credibility, digital crypto-currencies, and programmable contracts, as well as innovative ideas for protecting digital intellectual property and ensuring traceability.

In this chapter, digital content, and media blockchain are discussed. This chapter includes - fundamental principles of blockchain and the blockchain structure, content on the blockchain: centralized and decentralized, major problems related to blockchain technology, a taxonomy for classifying applications using blockchain technology, Content protection techniques, and future research directions and technical challenges.