

Blockchain-Based Trusted Achievement Record System

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Abstract

With an expanding number of institutions participating in the global education market, verifying the legitimacy of academic achievements such as CVs and certificates has grown more difficult. Blockchain is an enabling technology that has the potential to help solve this issue. This research presents a blockchain-based achievement record system that generates a verified record of accomplishments. Using the unique characteristics afforded by Blockchain technology (public Ethereum Blockchain) and smart contracts, the proposed solution intends to make the process of certificate authentication and validation more reliable, easy, and fast. The system's design and structure, as well as its components and tools, are described. The system is then evaluated through a series of experiments to determine its usability, effectiveness, performance, and cost. A score of 77.1 was obtained on the System Usability Scale (SUS) test. In addition, an examination of End-User Computing Satisfaction (EUCS) revealed that participants deemed the system to be extremely useful and user-friendly. We show that this method is a major advance over older systems, being both more user-friendly and efficient, through a literature review. We also provide a thorough cost study and outline the benefits and drawbacks of various blockchain systems.

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