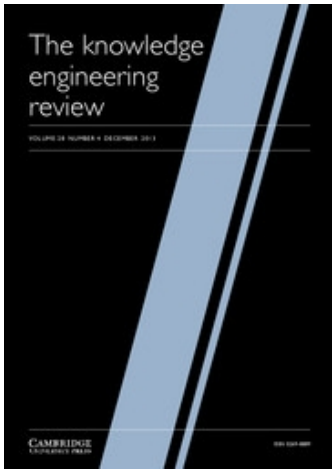

A blockchain-based database management system

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Abstract

The software and hardware applications are clearly on the way of becoming an integral tool of business, communication and popular culture in many parts of the world. People are interacting with the environment via the Internet to perform physical activities remotely. These applications are hosted in the public or private servers under the control of the server admin. The users' online usage data can be stored in public or private cloud platforms, used for processing and monitoring users' online behaviour and emotional factors and shared with third parties to facilitate making their business decisions. When users allow their data to be collected via software applications and mobile devices, users need to have some level of trust and control over their data. But, software applications or mobile devices connected to the cloud server using client–server architecture does not ensure the reliability, security and integrity among their data. To get over these kinds of limitations, we propose a database management system using blockchain technology that can be used by any software applications. The blockchain database connected to the cloud server can be used to increase the trustfulness of the application. Blockchain has the capability to provide decentralization, immutability and owner-controlled digital assets among software applications. Since users can save their data in a shared transaction repository with tamper-resistant records, it enables related parties to access and control users' data without the need for a central control system.