

システム情報工学研究科修士論文概要

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論文題目 Decentralized Trusted Timestamping Based on Blockchain and the Application to Intellectual Property Protection (ブロックチェーンによる分散型タイムスタンプとその知的財産保護への応用)			
論文概要 Decentralized trusted timestamping based on the blockchain is used to protect digital files such as videos, photos and documents. Present services only provide 40-byte storage for the file hash. This does not permit sufficient storage to encode other information. The proposed method expands the storage space to a maximum of N*40 bytes, thereby enabling the storage of additional information (e.g., file name, creator name, and keywords). We also implement a search service for retrieval of a digital file. By converting inputs to Bitcoin addresses and making a small payment to these addresses, a digital file can be stored securely in the blockchain. This file can be searched by ID and keywords using the proposed search service. Experimental results indicate that the proposed method is effective and can timestamp a file in an average of 20 min at a possible cost of 0.24 USD. We consider that the proposed method can prove the existence and integrity of a digital file.			
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