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Decentralized Data Marketplace Framework Using Blockchain-Based Smart Contract

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Abstract : Data is essential for enhancing the quality of life. Its value creates chances for users to profit from data sales and purchases. Users in data marketplaces, however, must share and trade data in a secure and trusted environment while maintaining their privacy. The first main contribution of this paper is to identify enabling technologies and challenges facing the development of decentralized data marketplaces. The second main contribution is to propose a decentralized data marketplace framework based on blockchain technology. The proposed framework enables sellers and buyers to transact with more confidence. Using a security deposit, the system implements a unique approach for enforcing honesty in data exchange among anonymous individuals. Before the transaction is considered complete, the system has a time frame. As a result, users can submit disputes to the arbitrators which will review them and respond with their decision. Use cases are presented to demonstrate how these technologies help data marketplaces handle issues and challenges.

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