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Blockchain and Stackleberg Game-based Fair and Trusted Data Pricing Scheme for Ride Sharing

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Abstract

This paper proposes a blockchain-based secure and optimal data pricing scheme for ride-sharing. It mainly focuses on securing the data transactions between vehicle owners and customers. It utilizes a communication network, i.e., 6G, to facilitate the low latency and high data rate transmissions between vehicle owner and customer. We applied a reverse Stackleberg game theory approach to yield the optimal payoff for vehicle owners and customers. The performance results of the proposed system over a 6G communication network is estimated by differentiating it with conventional networks such as 4G and 5G. The performance is evaluated considering the parameters latency, scalability, and the optimal payoff for the system. The performance results conclude that the proposed system is secure, reliable, and yields the optimal payoff for vehicle owners and customers. © 2022 IEEE.

Author keywords

Blockchain; Optimum pricing; Ride sharing; Smart contract; Stackleberg game

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