Blockchain Optimization Model Based on Consistent Hash Algorithm

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There are some problems such as duplicated storage and verification in current blockchain, which results in low operation efficiency. This model proposes a way to solve these problems based on consistent hash algorithm. The model builds two types of network nodes, which are server nodes and user nodes. For the problem of duplicated verification and storage, this model proposes a cooperative verification method to optimize time efficiency and a distributed storage way to optimize space efficiency. To ensure the safety of distributed storage data, we also use server nodes to check the data from time to time. Finally, to alleviate the pressure of blockchain, the model manages the data hierarchically. To find out the actual operational efficiency of the model, I implemented the model myself and collected data to analyze. From the data we can learn that the optimized model has done better than the original one in both time and space efficiently and when the number of nodes or the data scale increases, the optimized model does even better. We also compared the model with several latest research on blockchain storage management and this model has some advantages in many aspects. To conclude, this model optimized the operation efficiency of the blockchain and keep the safety of data at the same time. It will have a bright future in E-commerce, financial security and judicial industries in the future. For further research, I'm going to focus on streamlining the transmit data between nodes.

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