White Paper on Data Capitalization Technology

Platform: blockchain

Technical keywords: fully homomorphic encryption, smart contracts, zero-knowledge proofs, secure multi-party computation, consensus mechanisms, IPFS.

Prior period

Implement a dataCapitalization tool based on the bitshares blockchain platform and extend bitshares: implement basic data transactions and sale of assets; implement data mortgages, computational capacity mortgages, model mortgages; implement basic fully homomorphic calculations and related models analysis; implement basic storage and extraction of data.

Mid-term

Extend the dataCaptitalization tool to make it compatible with other blockchain platforms; perfect transaction model, specific transaction or nested zero-knowledge proof; implement the order transaction model: data detection, computational capacity detection, model checking; some necessary maintenance of previous issues.

Late period

Comprehensively improve the speed, performance, standardization of the platform and improve the incentive model.

DataCaptitalization is similar to a stand-alone P2P application tool and puts most of the user's operations into the chain. On the one hand, the abstract interface connects to the blockchain platform, and on the other hand, the abstract interface connects to the user. Put the key information and necessary proofs on the chain, and put the complex operations and user interactions under the chain, which can realize parallel development of the user and blockchain, greatly improve efficiency and scalability, reduce code bugs and make the software more modular, improve cohesion and reduce coupling, and also significantly reduce the load of trading volume on the chain.

Because the early period is based on bitshares , the model of the blockchain here is also bitshares. The abstraction of the data party is data_product_object, the related transaction operations is data_product_ops, but the related operations need everyone's ratification and the ratification is data_product_evaluator (this kind of ratification is an extension of DPOS in a sense); the related abstraction of the same model party is model_product_object,

model_product_ops, model_product_evaluator; the related abstraction of the computing party is model_product_object, model_product_ops, model_product_evaluator.

In order to facilitate the stability of the data transactions of all parties and the scalability of the transaction itself, we have established two abstractions of the market itself:

model trading market，power trading market。

The establishment of the two markets is to complete the supervision and traceability of all parties involved.

On the one hand, the referable "evidence" provided for the order trade in the middle and late periods is the basis for punishing all parties involved in evil, because our goal of middle and late period is to allow the market itself to punish certain users or businesses that violate market rules, without relying on the ruling of any institution. Even if the evil party can obtain the short-term benefits, in the long term, the evil party shall be punished from the whole chain.

On the other hand, the market itself can accelerate the development of all parties and play an effective role in the centralized management of resources. It is beneficial to the development of the platform itself; asset anchoring is needed to carry on the market, and it also maintains the economic balance of the participants on and under the chain to a certain extent.

Related technical details

Under the chain

DataCaptitalization is divided into three modules:

DataSource, cloundComputing and IPFS separately assume the data analysis

The related task modules of data calculation and data storage provide the index and related witnesses for the transactions on the chain at the same time. Data analysis includes: data formatting, data encryption and decryption, and data local operations;

Data calculation includes: data model analysis, data model application calculation, data fully homomorphic calculation; IPFS includes: data distributed storage solutions, and may interface with filecoin later to achieve low-cost, fast and permanent storage.

On the chain

On the chain, we have an index of related operations under the chain. We can in turn launch referendums on unreasonable operations within a certain period of time. We believe that participants in the market have voting rights, and 51% of users and businesses in the market are trustworthy. Under the circumstances, as everyone hopes that the market will develop in a better direction, this referendum will become more and more rational, because the goal of the entire market is to achieve a win-win situation. Even if 51% of users or businesses do evil, it will damage both themselves and others, and the market will gradually disintegrate under this situation.

To put a similar analogy, under the situation of the same return for the investors, the probability shows that an honest capital market is more conducive to investors' capital security, which is the market free choice of consensus mechanism and similar to the DPOS consensus mechanism.

Interface with the real life on the policy

Where there are market transactions, it is impossible for the government to break away from the supervision of the market. On the one hand, it ensures the stability of the lives of the majority of the people, and on the other hand, it also protects the interests of the country.

The same kind of data capitalization also handles certain illegal operations through compulsory measures by the government when necessary. Therefore, more regulatory platforms' reasonable involvement will only make the chain's market more transparent, standardized and secure.

Due to the influence of the consensus mechanism, all operations of the regulator may only be limited to the chain, because some more reasonable trading rules may reach a general consensus in the corresponding trading market, and this consensus itself is beneficial to the development of the entire market, and the supervision department does not have corresponding policies and laws, and this situation can be considered as the forerunner of the market, just as the Internet economy just came out.