CS+ Decentralized Finance: Blockchain and Cryptocurrency on the Internet Computer

Meeting Minutes

6/2/2021 10:00 – 11:00 AM EST

Present:

Prof. Luyao Zhang - Lead

Prof. Kartik Nayak – Co-Lead

Prof. Fan Zhang – Co-Lead

Prof. Yulin Liu – Co-Lead

Derrick Adam – Graduate Mentor

Dylan Paul – Full-Time Researcher

Urjit Banerjee – Full-Time Researcher

Oum Banerjee – Full-Time Researcher

Malika Rawal – Full-Time Researcher

Tianyu Wu – Research Support

William Zhao – Research Support

Elliot Ha – Research Support

Saad Lahrichi – Research Support

Ray Zhu – Research Support

Project Expectations from Prof. Yulin Liu, Prof. Fan Zhang (Computer Science), and Prof. Kartik Nayak (Computer Science):

Prof. Yulin Liu (Economics):

Currently there are two banking business models these days: 1) deposit comes before loan which corresponds to project B, Compound and Ave, and 2) loan before deposit – which is the business model of majority of banks today

Banks can create money, called credit money.

For example, if you want a $5 Million USD loan to open a factory from a newly set up bank with no deposits, you will pledge your house valued at say $10 Million USD as collateral. The bank then magically creates $5 Million USD in your bank account. This corresponds to Project A, Liquity.

Yulin proposes for project B, for example, users deposit cycles. A cycle is a stablecoin on the Internet Computer. Users could deposit cycles in this canister, also a smart contract or decentralized bank. They earn a fixed interest rate. Then borrowers could pledge ICP tokens, which is the native token of the Internet Computer as collateral. Like the house, you could pledge ICP tokens and borrow the cycles. Someday you payback your cycles as principal plus interest, then you get your collateral back.

For project A, you could provide features for one type of token. Users could deposit ICP tokens and then this canister generates a new token, called SDR, a basket of sovereign currencies at the IMF. Then someday you payback SDR tokens, then you get your ICP token back. Liquity has its own governance token called Liquity, but for this project we want to focus on the depositing of ICP token as a new SDR token. You simply pay SDR and you get ICP back.

Prof. Fan Zhang (Computer Science):
Think about what can only be done on blockchain, that cannot be achieved without blockchain. For example, Flash loan allows you to take out the loan without adding a deposit. The caveat is that you have to return the loan within one transaction. An extension of flash loan may be a good place to start for the projects. Maybe you don’t have to return the loan immediately, but you could have it for an extended period of time.

Prof. Kartik Nayak (Computer Science):
The purpose of blockchain is to decentralize. Instead of using one machine to do so something, we use many different machines who all have to agree and execute something together. Moving from centralized to decentralized brings about bottlenecks in many ways, such as, the time it takes to compute something and the time it takes to communicate. For the projects, think about which application or which kinds of applications are going to scale well/much better in the

decentralized world vs not. This would give us a sense of which architectures are suitable for a decentralized setting.