Meet-up 2019 | Doctorants & Industrie

Multiparty computation (MPC) and Blockchains

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1. CONTEXT

Blockchain technology has changed the way we deal with information. Everything is public on it, and it is hard to handle private data for computation purposes on a blockchain. Thus, the use of multiparty computation protocols could be a solution.

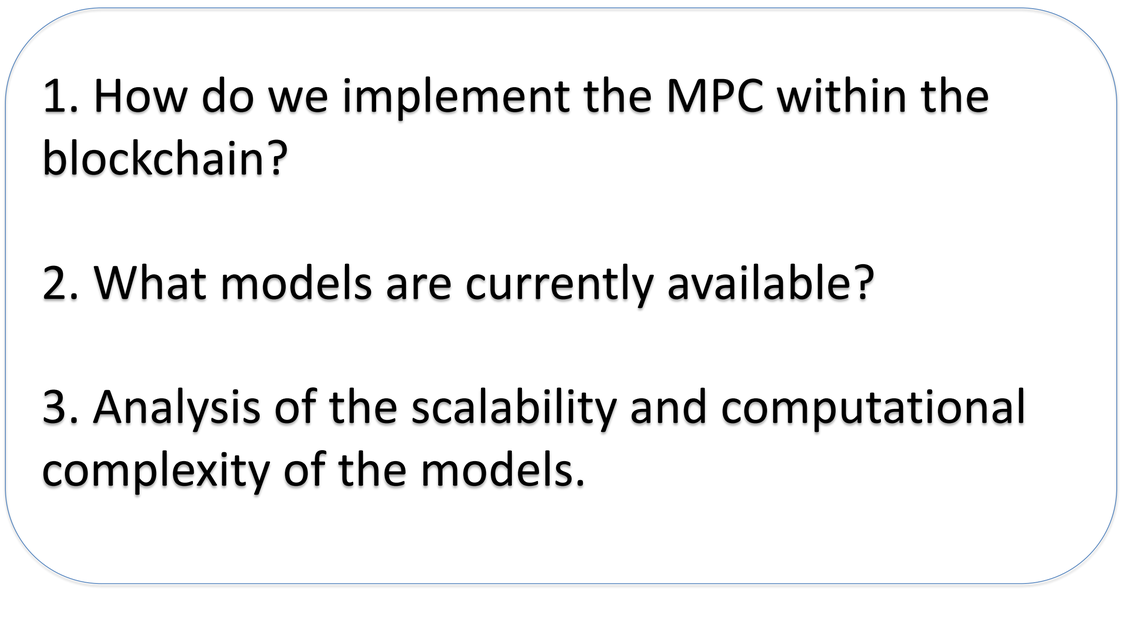
2. RESEARCH QUESTIONS

1. How do we implement the MPC within the blockchain?

2. What models are currently available?

3. Analysis of the scalability and computational complexity of the models.

3. RESEARCH METHOD



4.APPLICATION

1. Auctions within the blockchain (IPO, absolute…).

2. Computation on sensitive data (medical data, financial data…).

5. RESULTS

1. State of the art.

2. Key properties that defines the models.

3. A new model.

6. FUTURE WORK

1. Studying the different blockchain technologies such as ethereum, hyperledger in order to perform MPC efficiently.

2. Design and develop a new Secure, privacy-preserve MPC over Blockchain which achieves scalability and availbility.

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