

Micropayment Channels Game

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Proof-of-work blockchains have a significant issue: Scalability. Every single transaction must be committed to the blockchain and will therefore be stored in the blockchain. A prominent solution of this issue is a Micropayment Channels network on top of the blockchain, e.g. the Lightning Network for Bitcoin. This opens a market for service providers to create such a network.

In this thesis we will try to use game theoretic approaches to model the network creation game of the service providers. We will start by defining a cost function for a single player and a simple network topology and go more and more towards a general model of the situation. We will investigate different strategies and try to find Nash equilibria.

The optimal outcome of this thesis would be a general model for an N player game based on a generic network topology.