I produced an academic paper with researcher at the Warren Center for Network and Data Science at the University of Pennsylvania, for presentation at the International Conference on Complex Systems. This work constructs a formal model of the evolution of the economic network composed of addresses in a blockchain network as a dynamical system. Dynamical systems formulations in turn provide equipment for the treatment of global system properties despite the characterization of all action spaces as local to individual agents.

The work presented is the beginning of an effort to cross apply 15 years of work on decentralized optimization and coordination to a blockchain economics context. Key topics that are opened up from this framework include the relationship between iterative behaviors and/or repeated games characterized as dynamical systems, formal theories of economic invariants, and provability of convergence, uniqueness and stability of equilibria in potential games.

arXiv.org

A State-Space Modeling Framework for Engineering Blockchain-Enabled Economic...

Decentralized Ledger Technology, popularized by the Bitcoin network, aims to keep track of a ledger of valid transactions between agents of a virtual economy without a central institution for coordination. In order to keep track of a faithful and...

Thanks.

-mZ