



## Can you Hack the Bitcoin Network?

Bitcoin is considered to be one of the most valuable electronic currencies currently. As of June 2020, the price of each bitcoin is as high as \$10,000. Driven by such interests, tens of thousands of people are trying to attack the Bitcoin network every day, which has caused great concern for the security of the Bitcoin network. Other blockchain systems also face the same security threat.

Research on blockchain has mainly focus on Layer 1 and Layer 2 technologies, i.e., on designing consensus protocols and off-chain scaling solutions. However, for these layers to work properly, the network layer (Layer 0) has to maintain certain properties and guarantees, since all the data between the nodes of a blockchain system are exchanged via peer-to-peer communication.



In this thesis, we explore the vulnerabilities of a blockchain network and what are the effects of a network attack on the other layers of a blockchain system. The main task of this project is to study how to hack any blockchain system by manipulating the topology of the network and how to design a better blockchain network.

**Requirements:** Interest in blockchain, networks, theory or distributed systems. Basic programming skills are required. Familiarity with Bitcoin or other peer-to-peer networks would be beneficial.

We will have weekly meetings to address questions, discuss progress, and think about future ideas.

**Interested? Please contact us for more details!**

### Contact

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