

advanced network security

syllabus

Students first learn the basics of Internet security including public key cryptography, hash function, digital signature. Next, blockchain technologies are explained like Bitcoin, Ethereum, and Hyperledger fabric. Also, we deal with the authentication technologies including certificate, PKI, TLS, OAuth, DANE. By carrying out a team project, students propose and evaluate new ideas on blockchain or authentication technologies.

lecture plan

1week: Internet security overview

2week: blockchain

3week: bitcoin

4week: ECDSA

5week: Ethereum

6week: Hyperledger fabric

7week: certificate/PKI

8week: TLS

9week: DANE

10week: OAuth, Open ID Connect

11week: cryptography

12week: zk-snark

13week: smart contract programming

14week: project presentation

15week: project presentation