

# Yi LIU

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## RESEARCH INTERESTS

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Cryptography and network security, in particular: secure two-party/multi-party computation, zero-knowledge proofs, timed cryptography, blockchain-related applications.

## EDUCATION

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### The University of Hong Kong (HKU)

Sept. 2018 – Present

- Ph.D. candidate in Computer Science
- Joint Ph.D. Programme with SUSTech
- Supervisors: Siu-Ming Yiu (HKU) and Qi Wang (SUSTech)

### Southern University of Science and Technology (SUSTech)

Sept. 2014 – July 2018

- B.Eng. in Computer Science and Technology
- GPA: 3.84/4.00 (Core); 3.70/4.00 (Overall)
- Thesis: An Evaluation System Based on Blockchain and Linkable Ring Signature.
  - Best Thesis Award in the CSE Department, SUSTech.

## REFREED PUBLICATIONS

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1. Towards Practical Homomorphic Time-Lock Puzzles: Applicability and Verifiability.  
Yi Liu, Qi Wang, and Siu-Ming Yiu.  
To appear in The 27th European Symposium on Research in Computer Security (**ESORICS 2022**).  
<https://eprint.iacr.org/2022/585>
2. Making Private Function Evaluation Safer, Faster, and Simpler.  
Yi Liu, Qi Wang, and Siu-Ming Yiu.  
The 25th IACR International Conference on Practice and Theory of Public Key Cryptography (**PKC 2022**).  
<https://eprint.iacr.org/2021/1682>
3. Improved Zero-Knowledge Argument of Encrypted Extended Permutation.  
Yi Liu, Qi Wang, and Siu-Ming Yiu.  
The 17th International Conference on Information Security and Cryptology (**Inscrypt 2021**).  
<https://eprint.iacr.org/2021/1430>
4. Blind Polynomial Evaluation and Data Trading.  
Yi Liu, Qi Wang, and Siu-Ming Yiu.  
The 19th International Conference on Applied Cryptography and Network Security (**ACNS 2021**).  
<https://eprint.iacr.org/2021/413>
5. An Improvement of Multi-Exponentiation with Encrypted Bases Argument: Smaller and Faster.  
Yi Liu, Qi Wang, and Siu-Ming Yiu.  
The 16th International Conference on Information Security and Cryptology (**Inscrypt 2020**).  
<https://eprint.iacr.org/2020/567>

## MANUSCRIPTS

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1. An E-voting Protocol Based on Blockchain.  
Yi Liu and Qi Wang.

Manuscript, 2017.

<https://eprint.iacr.org/2017/1043>

## TALKS

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- Making Private Function Evaluation Safer, Faster, and Simpler.  
The 25th IACR International Conference on Practice and Theory of Public Key Cryptography (**PKC 2022**).  
Virtual. Mar. 2021.
- Improved Zero-Knowledge Argument of Encrypted Extended Permutation.  
The 17th International Conference on Information Security and Cryptology (**Inscrypt 2021**).  
Virtual. Aug. 2021.
- Blind Polynomial Evaluation and Data Trading.  
The 19th International Conference on Applied Cryptography and Network Security (**ACNS 2021**).  
Virtual. Jun. 2021.
- An Improvement of Multi-Exponentiation with Encrypted Bases Argument: Smaller and Faster.  
The 16th International Conference on Information Security and Cryptology (**Inscrypt 2020**).  
Guangzhou, China. Dec. 2020.

## EXPERIENCE

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- Teaching Assistant
  - COMP2119: Introduction to Data Structures and Algorithms (Fall 2021) HKU
  - CS403: Cryptography and Network Security (Fall 2019, Fall 2020) SUSTech
  - COMP7904: Information Security: Attacks and Defense (Spring 2019) HKU
  - CS304: Software Engineering (Spring 2017) SUSTech
  - CS201: Discrete Mathematics (Fall 2016) SUSTech
  - CS302: Operating System (Spring 2016) SUSTech
- Research Assistant at CoCrypto Lab, SUSTech Sept. 2016 – Aug. 2018
  - Adviser: Qi Wang
  - Result I: An E-voting Protocol Based on Blockchain. (Manuscript)
  - Result II: An Evaluation System Based on Blockchain and Linkable Ring Signature. (Undergraduate Thesis)

## PROFESSIONAL ACTIVITIES

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**Membership** IACR Student Member

**Journal Reviewer** International Journal of Information Security

**Conferene Reviewer** IEEE BSC@QRS (2021, 2020)

## SKILLS

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**Languages** Chinese (Native), English (Fluent)

**Programming** C/C++, Python