Chenzhi Zhu

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Education

Tsinghua University Beijing, China
B.S. in Institute for Interdisciplinary Information Sciences *2016-present*

- Selected to Tsinghua Xuetang Special Pilot CS Class, directed by Prof. Andrew Yao.
- Admission given by *Gold Medal* in the National Olympiad of Informatics 2015.
- Selected awards: Yao Award; Freshman Scholarship
- Visiting student to Carnegie Mellon University
- Overal GPA: 3.83/4.00

Research Interests

Cryptography, Theoretical Computer Science

Research Experience

Carnegie Mellon University Pennsylvania, USA
Research Assistant to Professor Vipul Goyal *2019.2-2019.9*

Efficient Multiparty Computation Protocol with Guaranteed Output Delivery:

- Improved the communication complexity of secure multiparty computation protocols with guaranteed output delivery.
- For unconditionally security, we design a fully secure multiparty computation protocol where the communication complexity per multiplication gate is linear in the number of parties and also with overhead smaller than previous results.
- Under standard cryptographic assumption, we also find a fully secure multiparty protocol that is as efficient as the best known unbounded secure secure-with-abort multiparty protocol given honest majority.

Private Storage and Computation on Blockchain:

- Exploring cryptographic primitives to add privacy guarantees to Blockchain protocols.
- Combining blockchain protocols with robust secret sharing schemes, we design a new decentralized protocol where users can storage their data privately on the blockchains and also retrieve their data according to the policy they set.
- Using secure multiparty computation protocol that compatible with the robust secret sharing scheme, our protocol allows users to design their own smart contracts and apply the contracts to the data privately.

Non-malleable Multi-source Randomness Extractor:

- Designing the protocols for non-malleable multi-source randomness extractor against overlapping tampering which is stronger than independent tampering.

Stanford University California, USA
Research Assistant to Professor Keith Winstein *2018.7-2019.2*

Continual Learning Improves Internet Video Streaming:

- Designed and implemented a *continual learning* algorithm for bitrate selection in streaming video which combines deep neuron network with model predictive control.
- Built a video-streaming website for gathering real-world data and testing performance of different algorithms.
- https://arxiv.org/abs/1906.01113

Honors & Rewards

Yao Award (recognition price), Tsinghua University *2019*

Academic Excellence Award, Tsinghua University *2017,2018*

Fellowship of Xuetang Talents Program, Tsinghua University *2017,2018*

Freshman Scholarship, Tsinghua University *2016*

***Gold medal** in National Olympiad in Informatics (China)* *2015*