

# Chenzhi Zhu

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## Education

### **Tsinghua University**

*B.S. in Institute for Interdisciplinary Information Sciences*

Beijing, China

*2016-present*

- Overall GPA: **3.83/4.00**; Ranking: 6/38
- Selected awards: Yao Award; Freshman Scholarship
- 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.
- Visiting student to Carnegie Mellon University

## Research Experience

### **Carnegie Mellon University**

*Research Assistant with Professor Vipul Goyal*

Pittsburgh, Pennsylvania

*Feb. 2019 – present*

#### **Efficient Multiparty Computation Protocol with Guaranteed Output Delivery:**

- Explored past results on the communication complexity of MPC protocol with guaranteed output delivery.
- Proposed some ideas in reducing the communication required per multiplication gate.
- Proposed a dynamic segment division protocol that improves the communication complexity under best case (when every party acts honestly).
- Reduced the number of broadcasts required when localizing a malicious party.

#### **Private Storage and Computation on Blockchain:**

- Exploring cryptographic primitives to add privacy guarantees to Blockchain protocols.
- Designed a new blockchain protocol that could not only allow the users to store their data privately but also do private computation over the private data.

#### **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.
- Showed relations between non-malleable secret sharing scheme and non-malleable extractor against similar class of tampering functions.

### **Stanford University**

*Research Assistant with Professor Keith Winstein*

Palo Alto, California

*Jul. 2018 – Feb. 2019*

#### **Continual Learning Improves Internet Video Streaming:**

- Designed and implemented a continual learning algorithm for bitrate selection in streaming video which combines deep learning algorithm with model predictive control.
- Built a video-streaming website for gathering real-world data and testing performance of different algorithms.
- Proposed a new transmission time prediction model that could make more accurate prediction than previous model.

## Submitted/Manuscripts

1. Vipul Goyal, Yifan Song, and Chenzhi Zhu. Communication-efficient unconditional honest-majority mpc with guaranteed output delivery. *Manuscript submitted for publication*, 2019
2. Francis Y Yan, Hudson Ayers, Chenzhi Zhu, Sadjad Fouladi, James Hong, Keyi Zhang, Philip Levis, and Keith Winstein. Learning in situ: a randomized experiment in video streaming. *Manuscript submitted for publication*, 2019

## Honors & Rewards

<i>Yao Award (recognition prize), Tsinghua University</i>	2019
<i>Academic Excellence Award, Tsinghua University</i>	2017,2018
<i>Fellowship of Xuetang Talents Program, Tsinghua University</i>	2017,2018
<i>Freshman Scholarship, Tsinghua University</i>	2016
<i>Gold medal in National Olympiad in Informatics (China)</i>	2015

## Additional Information

### Computer & Language Skills:

- Programming Languages: C/C++, Java, Python, JavaScript, HTML, PHP
- Libraries & Software: Django, InfluxDB, libscapi, Latex, Matlab
- Language: Chinese, English

### Hobbies & Interests:

- Member of the institute's basketball and baseball teams.
- Rubic's Cube: solve 3 by 3 within 20 seconds.
- Others: kating, Swimming, Billiards, Harmonic