

# TIANYI LIU

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## EDUCATION

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**Texas A&M University**

**TX, USA**

*Advised by Yupeng Zhang and Juan Garay*

*Aug. 2021 - Expected July 2025*

**Shanghai Jiao Tong University**

**Shanghai, China**

**Bachelor of Engineering (BE)** in Computer Science

*Sept. 2016 - July 2020*

Graduated from **ACM Class**, an elite CS program for top 5% of students.

## PUBLICATIONS

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**zkCNN: Zero Knowledge Proofs for Convolutional Neural Network Predictions and Accuracy** [\[pdf\]](#)

**Tianyi Liu**, Xiang Xie, Yupeng Zhang.

*(Accepted by CCS 2021)*

**Doubly Efficient Interactive Proofs for General Arithmetic Circuits with Linear Prover Time** [\[pdf\]](#)

Jiaheng Zhang, **Tianyi Liu**, Weijie Wang, Yinuo Zhang, Dawn Song, Xiang Xie, Yupeng Zhang.

*(Accepted by CCS 2021)*

## RESEARCH EXPERIENCE

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**Crypto Group, Texas A&M University, Texas**

**TX, USA**

*Advised by Yupeng Zhang and Juan Garay on Cryptography*

*Aug. 2021 - Expected July 2025*

- Mainly worked on **interactive zero knowledge proof** and its applications.

**Crypto Group, University of California, Berkeley**

**CA, USA**

*Advised by Sanjam Garg on Cryptography*

*July 2019 - Dec. 2019*

- Mainly worked on **identity-based lossy trapdoor function** and **n-KDM security**.

**LATTICE Lab, Shanghai Jiao Tong University**

**Shanghai, China**

*Advised by Yu Yu on Cryptography*

*July 2018 - July 2020*

- Mainly worked on **lattice-based homomorphic encryption**, **proof of sequential work**, and **PSI**.

## WORK EXPERIENCE

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**Matrixelements**

**Shanghai, China**

*Algorithm Intern, supervised by Xiang Xie*

*June 2020 - July 2021*

- Worked on the first track of **iDASH Privacy & Security Workshop 2020**, reached 93% accuracy in the final test and generate inferences for the testing dataset within only 1min.

- Published **two CCS papers** advised by Prof. Yupeng Zhang and Dr. Xiang Xie which are mainly related to zero knowledge proof.

## HONORS AND AWARDS

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**Programming Competition**

- **The Second Runner-up (3/255)** in The 2017 China Collegiate Programming Contest *Oct. 2017*

- **Champion (1/85)** in The 2017 Chinese Collegiate Programming Contest Woman Final *Mar. 2017*

- Bronze Medal in National Olympiad in Informatics (NOI) *July 2015*

## SELECTED PROJECT

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### MaStarCompiler [\[Github\]](#)

Shanghai, China

*A compiler for a simplified C++ language in Java*

*Apr. 2018 - June 2018*

- Designed and implemented a compiler compiling M\* language (a C++-and-java-like language) into NASM x86 assembly language using 6000 ~ 7000 lines in Java.
- Implemented features such as using ANTLR 4 as a parser tool to build AST, an self-defined IR, and optimizations based on static single assignment form.

### TomRiVer [\[Github\]](#)

Shanghai, China

*A Tomasulo-based CPU in Verilog*

*Jan. 2018*

- Implemented structures such as branch prediction, forwarding within 2 weeks.

## TEACHING EXPERIENCE

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**Teaching Assistant** of MS208 @ SJTU: Compiler Design and Implementation

*Spring 2018 - 2019*

**Assistant Coach** of The ACM-ICPC Team @ SJTU

*2018 - 2019*

## SKILLS

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**Programming Languages:** C++, Python3, Java, and Verilog

**Tools:** Github, L<sup>A</sup>T<sub>E</sub>X, Markdown