

# Zhedong Wang

## CURRENT POSITION

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### Florida Atlantic University

*Jul 2019 - Current*

Postdoctoral Fellow in Cryptography

Supported by NSF CRII Award (CNS-1657040) and NSF Career Award (CNS-1942400)

College of Engineering and Computer Science

Phone: +1 4016628957

Email: wangz@fau.edu

Supervisor: Prof. Feng-Hao Liu

Personal Website: <https://wangz2019.github.io>

## RESEARCH INTERESTS

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- My main interests are in cryptography; especially
  - Post-quantum Cryptography
  - Lattice-based Cryptography: Fully Homomorphic Encryption, Identity-based Encryption, Attribute-based Encryption, Functional Encryption
  - Leakage and Tampering Resilient Cryptography
- I am also interested in computational complexity and algebraic number theory

## EDUCATION

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### University of Chinese Academy of Sciences

*Sep 2013 - Jun 2019*

Ph.D. in Cryptography & Information Security

State Key Laboratory of Information Security (SKLOIS)

Advisors: Prof. Mingsheng Wang and Prof. Feng-Hao Liu (co-advised at FAU)

Thesis: Research on Lattice-based Public Key Cryptosystems Design and Tight Security

### Sichuan University

*Sep 2009 - Jun 2013*

B.S. in Mathematics

## TEACHING EXPERIENCES

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- Guest Lecturer for COT 6930: Cryptography under Physical Attacks Fall 2019
  - Presented Entropy and Randomness Extraction
  - Instructor: Feng-Hao Liu
  - Florida Atlantic University, FL
- Guest Lecturer for COT 6200: Computational Complexity Fall 2017
  - Hosted student presentations
  - Instructor: Feng-Hao Liu
  - Florida Atlantic University, FL
- Teaching Assistant for 201M4001H: The Mathematical Foundations of Cryptography Fall 2016
  - Graded assignments and exams

- Instructor: Mingsheng Wang and Yongqiang Li
- University of Chinese Academy of Sciences, Beijing.

## VISITING EXPERIENCES

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- Simons Institute for the Theory of Computing, UC Berkeley, CA Feb 2020
  - Event: Workshop
  - Topic: Lattices: Geometry, Algorithms and Hardness
- Florida Atlantic University, Boca Raton, FL Sep 2017 - Nov 2018
  - Mentor: Feng-Hao Liu
  - Topic: Design and analysis on new randomized algorithm

## PUBLICATIONS

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### Publications in Print

#### • Conference Publications

- 1 Qiqi Lai, Feng-Hao Liu, Zhedong Wang. **Rate-1 Key-Dependent Message Security via Reusable Homomorphic Extractor against Correlated-Source Attacks**. To appear in PKC 2021.
- 2 Qiqi Lai, Feng-Hao Liu, Zhedong Wang. **New Lattice Pre-sampling Technique and its Applications to Functional Encryption - Stronger Security and Smaller Ciphertexts**. To appear in Eurocrypt 2021.
- 3 Feng-Hao Liu, Zhedong Wang. **Rounding in the Rings**. In Annual International Cryptology Conference (CRYPTO), 2020.
- 4 Qiqi Lai, Feng-Hao Liu, Zhedong Wang. **Almost Tight Security in Lattices with Polynomial Moduli - PRF, IBE, All-but-many LTF, and More**. In Proceedings of the 23th International Conference on Practice and Theory of Public Key Cryptography (PKC), 2020.
- 5 Zhedong Wang, Xiong Fan, Feng-Hao Liu. **FE for Inner Products and Its Application to Decentralized ABE**. In Proceedings of the 22th International Conference on Practice and Theory of Public Key Cryptography (PKC), 2019.
- 6 Zhedong Wang, Xiong Fan and Mingsheng Wang. **Compact Inner Product Encryption from LWE**. In Proceedings of the 19th International Conference on Information and Communications Security (ICICS), 2017.

#### • Journal Publications

- 1 Yuan Chen, Qingkuan Dong, Yannan Li, Qiqi Lai and Zhedong Wang. **Natural sd-RCCA Secure Public-key Encryptions from Hybrid Paradigms**. Journal of Universal Computer Science, vol. 25, no. 3 (2019), 158-181.

### Manuscripts

- 1 Qiqi Lai, Feng-Hao Liu, Zhedong Wang. **Leakage-resilient ABE with Optimal Leakage Rates from Lattices**. 2020.

2 Mingsheng Wang, Xi Lin, Heyang Cao, Feng-Hao Liu, Zhedong Wang. **Prcatical ( $\ell$ -more) Extractable Hash Functions from Ideal Lattices**. 2020.

## SCIENTIFIC PRESENTATIONS

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- Rounding in the Rings
  - Shanxi Normal University (Virtual) Feb 2021
- Algebraically Structured Learning with Rounding (LWR)
  - Florida Atlantic University, FL, US Aug 2020
- Almost Tight Security in Lattices
  - Florida Atlantic University, FL, US Feb 2020
- FE for Inner Products and Its Application to Decentralized ABE
  - PKC 2019, Beijing China Apr 2019

## AWARDS

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- Travel Grant, Simons Institute for the Theory of Computing, CA 2020
- National Scholarship for Encouragement, China, Dec 2012

## PROFESSIONAL SERVICES

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- External Reviewer: PKC 2021, CRYPTO 2020, Asiacrypt 2020, PKC 2019, Asiacrypt 2019, IEEE Access.