

RESEARCH INTERESTS

Blockchains, Security and Privacy, Distributed Systems, Applied Cryptography, Research Ethics and Legal Compliance.

EDUCATION

Aug. 2017 - **Ph.D. student in Computer Science**, Cornell University.
Present Advisor: Ari Juels, Department of Computer Science.

Sept. 2013 - **B.E. in Computer Science**, Shanghai Jiao Tong University (SJTU), China.
Jul. 2017 ACM Honored Class of Zhiyuan College, GPA: 89/100.

RESEARCH EXPERIENCE

Aug. 2017 - **Graduate Research Assistant**, Department of Computer Science, Cornell University.
Present Advised by Prof. Ari Juels.

Aug. 2020 - **Part-Time Student Researcher**, Novi, Facebook.
Nov. 2020 Hosted by Dr. Kostas Chalkias.

June. 2020 - **Research Intern**, Novi, Facebook.
Aug. 2020 Hosted by Dr. Kostas Chalkias.

Jul. 2016 - **Research Intern**, Department of Computer Science, Cornell University.
May. 2017 Advised by Prof. Ari Juels.

Aug. 2015 - **Research Assistant**, Advanced Computer Architecture Laboratory, SJTU.
Jun. 2016 Advised by Prof. Li Jiang and Prof. Shiyuan Hu.

PUBLICATIONS

- [CCS21] **Y. Ji**, K. Chalkias, Generalized Proofs of Liabilities, In: *Proceedings of the 2020 ACM SIGSAC conference on Computer and Communications Security (CCS)*, to appear, 2021.
- [NDSS21] C. Hou, M. Zhou, **Y. Ji**, P. Daian, F. Tramer, G. Fanti, and A. Juels, SquirRL: Automating Attack Analysis on Blockchain Incentive Mechanisms with Deep Reinforcement Learning, In: *Network and Distributed System Security Symposium (NDSS)*, 2021.
- [CCS20] M. Mirkin*, **Y. Ji***, J. Pang, A. Klages-Mundt, I. Eyal, and A. Juels, BDoS: Blockchain Denial of Service, In: *Proceedings of the 2020 ACM SIGSAC conference on Computer and Communications Security (CCS)*, pp. 601-619, 2020.
- [CCS19] I. Bentov, **Y. Ji**, F. Zhang, L. Breidenbach, P. Daian, and A. Juels, Tesseract: Real-time cryptocurrency exchange using trusted hardware, In: *Proceedings of the 2019 ACM SIGSAC conference on Computer and Communications Security (CCS)*, pp. 1521-1538, 2019.
- [CCS17] E. Cecchetti, F. Zhang, **Y. Ji**, A. Kosba, A. Juels, and E. Shi, Solidus: Confidential distributed ledger transactions via PVORM, In: *Proceedings of the 2017 ACM SIGSAC conference on Computer and Communications Security (CCS)*, pp. 701-717, 2017.

OPEN-SOURCED PROJECTS

- **DAPOL+**, <https://github.com/novifinancial/solvency>.
An efficient and practical protocol for proof of liabilities with provable security and privacy.
- **SMTTree**, <https://github.com/novifinancial/smtree>.
An implementation of paddable sparse Merkle tree, the data structure used by various cryptographic protocols including DAPOL+ and HashWires.
- **SquirRL**, <https://github.com/wuwuz/SquirRL>.
A framework for using deep reinforcement learning to identify attack strategies on blockchain incentive mechanisms.

*: Equal contribution

- **Solidus**, <https://github.com/ethancecchetti/Solidus-prototype>.
A protocol for confidential yet verifiable transactions on public blockchains.
- **Town Crier**, <https://www.town-crier.org>.
An authenticated data feed for the blockchain.
- **Banyan**, <https://github.com/iseriohn/Banyan>.
An automated multi-track program committee meeting arrangement tool minimizing the number of sessions.
Used in NDSS 2017 & 2018.

AWARDS & HONORS

- 2021 **Facebook Fellowship in Blockchain and cryptoeconomics.**
- 2020-2021 **DLI Doctoral Fellowship**, *Digital Life Initiative*, Cornell Tech.
- 2020 **Finalist for the 2020 Facebook Fellowship Program.**
- 2018 **First Place**, *IC3-Ethereum Crypto Boot Camp*.
Team co-leader of Project Chicago.
- 2017-2018 **Cornell Fellowship**, *Cornell University*.
- 2017 **Excellent Graduate Award**, *Shanghai Jiao Tong University*.
- 2017 **Outstanding Student Scholarship**, *Shanghai Jiao Tong University*.
- 2014 **KoGuan Scholarship**, *Shanghai Jiao Tong University*.
- 2014 - 2016 **Academic Excellence Scholarship**, *Shanghai Jiao Tong University*.
- 2013 - 2018 **ACM-International Collegiate Programming Contest**.
 - **Champion**, Greater New York Regional 2017.
Proceeded to World Final 2018.
 - **Gold Medal & The Best Female Team**, Asia Regional Shanghai 2014.
Team leader, *SJTU's first gold medal won by a female team*.
 - **Silver Medal & The Best Female Team**, Asia Regional Nanjing 2013.
 - **Silver Medal**, Asia Regional Phuket 2013.

TEACHING

- Spring 2020 **Teaching Assistant**, *CS5433: Blockchains, Cryptocurrencies, and Smart Contracts*, Cornell.
Instructed by Prof. Ari Juels.
- Fall 2015 **Teaching Assistant**, *Automata Theory*, SJTU.
Instructed by Prof. John Hopcroft.
- Apr. 2015 - **Chief Student Coach**, *ACM-ICPC Team*, SJTU.
- Jun. 2016 SJTU won the second place in World Final 2016 and 4 championships in 2015-2016 Asia Regionals.
The first female in this position.

ACADEMIC SERVICE

- **External Reviewer.**
USENIX Security 2020, FC 2021, S&P 2022.
- **SubReviewer.**
AFT 2019, CCS 2020.