

# Kevin Liao

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## Research Interests

Security & privacy, formal methods, cryptography, distributed systems

## Education

[M.S. in Computer Science](#), University of Illinois at Urbana-Champaign Aug. 2017–May 2019  
Advisor: Andrew Miller

[B.S. in Computer Science with Honors](#), Arizona State University Aug. 2013–May 2017  
Advisor: Adam Doupé

## Honors & Awards

[National Science Foundation Graduate Research Fellowship](#) 2017

[Outstanding Undergraduate in Computer Science](#), Arizona State University May 2017

[Moeur Award](#), Arizona State University May 2017

## Research Funding

[SaUCy: Modular Testing and Verification for Distributed Cryptography](#) 2018  
Facebook, \$50,000  
PI: Andrew Miller, Co-PI: [Kevin Liao](#)

[Inductive Reverse Engineering of Web Applications](#) 2016–2017  
Fulton Undergraduate Research Initiative, \$3,000  
Advisor: Adam Doupé

## Publications

\* = alphabetical authorship

### Refereed Conferences

[ILC: A Calculus for Composable, Computational Cryptography](#)  
[Kevin Liao](#), Matthew A. Hammer, and Andrew Miller  
Proceedings of the Conference on Programming Language Design and Implementation (PLDI), June 2019.

[Behind Closed Doors: Measurement and Analysis of CryptoLocker Ransoms in Bitcoin](#)  
[Kevin Liao](#), Ziming Zhao, Adam Doupé, and Gail-Joon Ahn  
Proceedings of the Symposium on Electronic Crime Research (eCrime), June 2016.

### Refereed Workshops

[Incentivizing Blockchain Forks via Whale Transactions](#)  
[Kevin Liao](#) and Jonathan Katz  
Proceedings of the Workshop on Bitcoin and Blockchain Research (BITCOIN), April 2017.

### Books & Chapters

[Ransomware and Cryptocurrency: Partners in Crime](#)  
Gail-Joon Ahn, Adam Doupé, Ziming Zhao, and [Kevin Liao](#)  
Book chapter in *Cybercrime Through an Interdisciplinary Lens* ed. by Thomas J. Holt.

### Manuscripts In Submission

[A Probabilistic Separation Logic](#)  
Gilles Barthe, Justin Hsu, [Kevin Liao](#)\*

[Logging to the Danger Zone: In-Memory Attacks and Defenses on System Auditing Frameworks](#)

Riccardo Paccagnella, [Kevin Liao](#), Adam Bates, Dave (Jing) Tian

[Black-Box Web Vulnerability Analysis Using White-Box Techniques](#)

[Kevin Liao](#), Connor Nelson, Zackary Crosley, and Adam Doupé

## Experience

[Max Planck Institute for Security & Privacy](#)

Researcher

Advisor: Gilles Barthe

Bochum, Germany

Aug. 2019–Present

[Max Planck Institute for Software Systems](#)

Visiting Researcher

Advisor: Gilles Barthe

Saarbrücken, Germany

Aug. 2019–Present

[University of Illinois at Urbana-Champaign](#)

Research Assistant

Advisor: Andrew Miller

Champaign, IL, USA

Aug. 2017–Aug. 2019

[Arizona State University](#)

Research Assistant

Advisor: Adam Doupé

Tempe, AZ, USA

May 2017–Aug. 2017

[University of Maryland](#)

Undergraduate Research Assistant

Advisor: Jonathan Katz

College Park, MD, USA

Jun. 2016–Aug. 2016

[Arizona State University](#)

Undergraduate Research Assistant

Advisors: Gail-Joon Ahn, Adam Doupé, Ziming Zhao

Tempe, AZ, USA

Mar. 2015–May 2017

## Teaching

[Teaching Assistant](#), University of Illinois at Urbana-Champaign

CS498: Applied Cryptography

Fall 2018

[Undergraduate Teaching Assistant](#), Arizona State University

CSE220: Programming for Computer Engineering

Spring 2017

CSE240: Introduction to Programming Languages

Fall 2016

CSE110: Introduction to Programming

Fall 2014

## Advising & Mentoring

Dhruv Bohra, Eunice Zhou (UIUC PURE program)

Fall 2018

## Talks

[ILC: A Calculus for Composable, Computational Cryptography](#)

Prosecco Seminar at INRIA Paris (Paris, France)

Sep. 2019

Conference on Programming Language Design and Implementation (Phoenix, AZ, USA)

Jun. 2019

[Incentivizing Blockchain Forks via Whale Transactions](#)

Workshop on Bitcoin and Blockchain Research (Sliema, Malta)

Apr. 2017

[Measurement and Analysis of CryptoLocker Ransoms in Bitcoin](#)

Symposium on Electronic Crime Research (Toronto, Canada)

Jun. 2016

## Service

[Program Committee](#), ICBC '19

[Subreviewer](#), USENIX Security '20, FGCS '18, CCS '17

## Outreach

First Gen Scientists  
Course developer

Tempe, AZ, USA  
Fall 2016