Kevin Liao

kliao@mpi-sws.org ⌝ | www.kevliao.com ⌝

Research Interests

Security & privacy, programming languages, cryptography, distributed systems

Education

M.S. in Computer Science, University of Illinois at Urbana-Champaign Advisor: Andrew Miller	Aug. 2017–May 2019
B.S. in Computer Science with Honors, Arizona State University Advisor: Adam Doupé	Aug. 2013–May 2017

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 Facebook, $50,000 PI: Andrew Miller, Co-PI: <u>Kevin Liao</u>	2018
Inductive Reverse Engineering of Web Applications Fulton Undergraduate Research Initiative, $3,000 Advisor: Adam Doupé	2016-2017

Publications

* = alphabetical authorship

Refereed Conferences

ILC: A Calculus for Composable, Computational Cryptography
<u>Kevin Liao</u>, 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
<u>Kevin Liao</u>, 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
<u>Kevin Liao</u> 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 <u>Kevin Liao</u>
Book chapter in *Cybercrime Through an Interdisciplinary Lens* ed. by Thomas J. Holt.

Manuscripts In Submission

A Probabilistic Separation Logic
Gilles Barthe, Justin Hsu, <u>Kevin Liao</u>*

Logging to the Danger Zone: In-Memory Attacks and Defenses on System Auditing Frameworks
Riccardo Paccagnella, <u>Kevin Liao</u>, Adam Bates, Dave (Jing) Tian

Black-Box Web Vulnerability Analysis Using White-Box Techniques
<u>Kevin Liao</u>, Connor Nelson, Zackary Crosley, and Adam Doupé

Experience

Max Planck Institute for Security & Privacy	Bochum, Germany
Researcher	Aug. 2019–Present
Advisor: Gilles Barthe	

Max Planck Institute for Software Systems   Saarbrücken, Germany
Visiting Researcher   Aug. 2019–Present
Advisor: Gilles Barthe

University of Illinois at Urbana-Champaign   Champaign, IL, USA
Research Assistant   Aug. 2017–Aug. 2019
Advisor: Andrew Miller

Arizona State University   Tempe, AZ, USA
Research Assistant   May 2017–Aug. 2017
Advisor: Adam Doupé

University of Maryland   College Park, MD, USA
Undergraduate Research Assistant   Jun. 2016–Aug. 2016
Advisor: Jonathan Katz

Arizona State University   Tempe, AZ, USA
Undergraduate Research Assistant   Mar. 2015–May 2017
Advisors: Gail-Joon Ahn, Adam Doupé, Ziming Zhao

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