## Doowon Kim

Assistant Professor of Electrical Engineering and Computer Science University of Tennessee, Knoxville

Min H. Kao Building, Room 345 1520 Middle Drive Knoxville, TN 37996-2250 doowon@utk.edu https://doowon.github.io

### **EDUCATION**

University of Maryland, College Park, MD, USA
 Ph.D. in Computer Science
 Advisor: Prof. Tudor Dumitraş
 Washington University in St. Louis, St. Louis, MO, USA
 Attended in the Dept. of Computer Science and Engineering for Ph.D. program
 Transferred to University of Maryland due to Dr. Turner's retirement
 Advisor: Prof. Jonathan Turner
 University of Utah, Salt Lake City, UT, USA
 M.S. in Computer Science
 Hankuk University of Foreign Studies (HUFS), South Korea
 B.E. in Computer Science and Engineering

### **APPOINTMENTS**

University of Tennessee, Knoxville, Knoxville, TN
 Assistant Professor, Department of Electrical Engineering and Computer Science Aug. 2020 – present

• Symantec Research Labs, Culver City, CA
Research Intern

Jun. 2019 – Aug. 2019

• Korea Electronics Technology Institute (KETI), South Korea
Research Intern Feb. 2008 – Jul. 2011

## **HONORS & AWARDS**

- Best Student Paper Award, WISA, 2022
- Ann G. Wylie Dissertation Fellowship, University of Maryland, 2019
- 2nd and 4th Prizes at Research Competition for Korean Graduate Students, 2018
- 5th Annual NSA Best Scientific Cybersecurity Paper, NSA, 2017
- Valedictorian Award, Dept. of CSE, HUFS, 2011

## **PUBLICATIONS**

### **Refereed Conference Proceedings**

\*Underline: my advisee students.

C.26. Evaluating the Effectiveness and Robustness of Visual Similarity-based Phishing Detection Models.

<u>Fujiao Ji</u>, <u>Kiho Lee</u>, Hyungjoon Koo, Wenhao You, Euijin Choo, Hyoungshick Kim, **Doowon Kim**. USENIX Security Symposium (USENIX Security) 2025.

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#### C.25. What's in Phishers: A Longitudinal Study of Security Configurations in Phishing Websites and Kits.

Kyungchan Lim, Kiho Lee, Fujiao Ji, Yonghwi Kwon, Hyoungshick Kim, Doowon Kim. The Web Conference 2025 (formerly WWW).

#### C.24. 7 Days Later: Analyzing Phishing-Site Lifespan After Detected.

Kiho Lee\*, Kyungchan Lim\*, Hyoungshick Kim, Yonghwi Kwon, Doowon Kim.

\*: equally contributions.

The Web Conference 2025 (formerly WWW).

## C.23. An LLM-Assisted Easy-to-Trigger Backdoor Attack on Code Completion Models: Injecting Disguised Vulnerabilities against Strong Detection.

Shenao Yan, Shen Wang, Yue Duan, Hanbin Hong, Kiho Lee, Doowon Kim, and Yuan Hong. USENIX Security Symposium (USENIX Security) 2024.

## C.22. Beneath the Phishing Scripts: A Script-Level Analysis of Phishing Kits and Their Impact on Real-World Phishing Websites.

Woonghee Lee, Junbeom Hur, and Doowon Kim.

ACM ASIACCS '24: The 19th ACM ASIA Conference on Computer and Communications Security 2024.

## C.21. Poisoned ChatGPT Finds Work for Idle Hands: Exploring Developers' Coding Practices with Insecure Suggestions from Poisoned AI Models.

Sanghak Oh\*, Kiho Lee\*, Seonhye Park, **Doowon Kim**, and Hyoungshick Kim.

\*: equally contributions.

IEEE S&P '24: The 45th IEEE Symposium on Security and Privacy.

## C.20. Phishing Vs. Legit: Comparative Analysis of Client-Side Resources of Phishing and Target Brand

Kyungchan Lim, Jaehwan Park, Doowon Kim.

The Web Conference 2024 (formerly WWW).

#### C.19. Not All Asians are the Same: A Disaggregated Approach to Identifying Anti-Asian Racism in Social Media.

Fan Wu, Sanyam Lakhanpal, Qian Li, Kookjin Lee, Doowon Kim, Heewon Chae, K. Hazel Kwon. The Web Conference 2024 (formerly WWW).

#### C.18. Sharing Cyber Threat Intelligence: Does It Really Help?

Beomjin Jin, Eunsoo Kim, Hyunwoo Lee, Elisa Bertino, Doowon Kim, Hyoungshick Kim. NDSS '24: The 31st Network and Distributed System Security Symposium.

### C.17. A Large Scale Study and Classification of VirusTotal Reports on Phishing and Malware URLs.

Euijin Choo, Mohamed Nabeel, Doowon Kim, Ravindu De Silva, Ting Yu, and Issa Khalil. ACM SIGMETRICS '24: ACM Special Interest Group on Measurement and Evaluation 2024.

### C.16. A Longitudinal Study of Vulnerable Client-side Resources and Web Developers' Updating Behaviors.

Kyungchan Lim, Yonghwi Kwon, and Doowon Kim.

ACM IMC 2023: The 23rd ACM Internet Measurement Conference.

#### C.15. PyFET: Forensically Equivalent Transformation for Python Binary Decompilation.

Ali Ahad, Chijung Jung, Ammar Askar, Doowon Kim, Taesoo Kim, and Yonghwi Kwon.

IEEE S&P'23: The 44th IEEE Symposium on Security and Privacy (Oakland).

#### C.14. Deep Sequence Models for Packet Stream Analysis and Early Decisions.

Minji Kim, Dongeun Lee, Kookjin Lee, Doowon Kim, Sangman Lee, and Jinoh Kim.

LCN'22: The 47th IEEE Conference on Local Computer Networks.

#### C.13. Dazzle-attack: Anti-Forensic Server-side Attack via Fail-free Dynamic State Machine.

\*Best Student Paper Award.

Bora Lee\*, <u>Kyungchan Lim</u>\*, JiHo Lee, Chijung Jung, **Doowon Kim**, Kyu Hyung Lee, Haehyun Cho, and Yonghwi Kwon. (\*: co-first authors)

WISA'22: The 23rd World Conference on Information Security Applications.

#### C.12. Hiding Critical Program Components via Ambiguous Translation.

Chijung Jung, **Doowon Kim**, An Chen, Weihang Wang, Yunhui Zheng, Kyu Hyung Lee, and Yonghwi Kwon.

ICSE 2022: International Conference on Software Engineering.

Acceptance rate: 28.5% (197 out of 691).

#### C.11. Defeating program analysis techniques via Ambiguous Translation.

Chijung Jung, **Doowon Kim**, Weihang Wang, Yunhui Zheng, Kyu Hyung Lee, and Yonghwi Kwon. ASE 2021 (NIER): 36th IEEE/ACM International Conference on Automated Software Engineering (New Ideas and Emerging Results Track).

# C.10. Certified Malware in South Korea: A Localized Study of Breaches of Trust in Code-Signing PKI Ecosystem.

Bumjun Kwon, Sanghyun Hong, Yuseok Jeon, and Doowon Kim.

ICICS 2021: The 2021 International Conference on Information and Communications Security. Acceptance rate: 24.3% (49 out of 202).

#### C.9. Security Analysis on Practices of Certificate Authorities in the HTTPS Phishing Ecosystem.

Doowon Kim, Haehyun Cho, Yonghwi Kwon, Adam Doupe, Sooel Son, Gail-Joon Ahn, Tudor Dumitras.

ACM AsiaCCS '21: ACM ASIA Conference on Computer and Communications Security.

Acceptance rate: 19.3% (70 out of 362)

#### C.8. Analyzing Spatial Differences in the TLS Security of Delegated Web Services.

Joonhee Lee, Hyunwoo Lee, Jongheon Jeong, **Doowon Kim**, Taekyoung "Ted" Kwon.

ACM AsiaCCS '21: ACM ASIA Conference on Computer and Communications Security.

Acceptance rate: 19.3% (70 out of 362).

#### C.7. TLS 1.3 in Practice: How TLS 1.3 Contributes to the Internet.

Hyunwoo Lee, **Doowon Kim**, and Yonghwi Kwon.

The Web Conference 2021 (formerly WWW).

Acceptance rate: 20.6% (357 out of 1736).

#### C.6. Scam Pandemic: How Attackers Exploit Public Fear through Phishing.

Marzieh Bitaab, Haehyun Cho, Adam Oest, Penghui Zhang, Zhibo Sun, Rana Pourmohamad, **Doowon** Kim, Tiffany Bao, Ruoyu Wang, Yan Shoshitaishvili, Adam Doupé, and Gail-Joon Ahn.

eCrime 2020: The 2020 APWG Symposium on Electronic Crime Research.

## C.5. The Broken Shield: Measuring Revocation Effectiveness in the Windows Code-Signing PKI.

Doowon Kim, Bum Jun Kwon, Kristián Kozák, Christopher Gates, and Tudor Dumitraș.

USENIX Security 2018: USENIX Security Symposium.

Acceptance rate: 19.2% (100 out of 520).

#### C.4. Certified Malware: Measuring Breaches of Trust in the Windows Code-Signing PKI.

Doowon Kim, Bum Jun Kwon, and Tudor Dumitraș.

CCS 2017: ACM Conference on Computer and Communications Security.

Acceptance rate: 18.1% (151 out of 836).

#### C.3. Comparing the usability of cryptographic APIs.

Yasemin Acar, Michael Backes, Sascha Fahl, Simson Garfinkel, **Doowon Kim**, Michelle L. Mazurek, and Christian Stransky. (The authors are alphabetically ordered.)

S&P 2017: IEEE Symposium on Security and Privacy (S&P).

Acceptance rate: 14.3% (60 out of 419).

C.2. An inconvenient trust: User attitudes toward security and usability tradeoffs for key-directory encryption systems.

Wei Bai, **Doowon Kim**, Moses Namara, Yichen Qian, Patrick Gage Kelley, and Michelle L. Mazurek. SOUPS 2016: Symposium on Usable Privacy and Security.

C.1. You get where you're looking for: The impact of information sources on code security.

\*Awarded the 5th annual NSA Best Scientific Cybersecurity Paper.

Yasemin Acar, Michael Backes, Sascha Fahl, **Doowon Kim**, Michelle L. Mazurek, and Christian Stransky. (The authors are alphabetically ordered.)

S&P 2016: IEEE Symposium on Security and Privacy (S&P).

Acceptance rate: 13.4% (55 out of 411).

## Refereed Journal & Magazine Articles

J.4. fFTP: a fast file transfer protocol for home N-screen platform.

Doowon Kim, Jinsuk Baek, Paul S Fisher, Sangchul Kim.

Personal and Ubiquitous Computing. October 2017. DOI: 10.1007/s00779-017-1082-5

J.3. Balancing security and usability in encrypted email.

Wei Bai, **Doowon Kim**, Moses Namara, Yichen Qian, Patrick Gage Kelley, and Michelle L. Mazurek. IEEE Internet Computing: 21 (3), 30-38. 2017

J.2. How Internet Resources Might Be Helping You Develop Faster but Less Securely.

Yasemin Acar, Michael Backes, Sascha Fahl, **Doowon Kim**, Michelle L Mazurek, Christian Stransky. (The authors are alphabetically ordered.)

IEEE Security & Privacy, vol. 15, no. 2, pp. 50-60, 2017. doi: 10.1109/MSP.2017.24.

J.1. An Adaptive Primary Path Switching Scheme for Seamless mSCTP Handover.

Jinsuk Baek, **Doowon Kim**, Paul S. Fisher, and Minho Jo.

Smart Computing Review (Smart CR) 2014 (Invited Paper).

## **Refereed Workshop Proceedings**

W.3. Evaluating Password Composition Policy and Password Meters of Popular Websites.

Kyungchan Lim, Joshua H. Kang, Matthew Dixson, Hyungjoon Koo, and **Doowon Kim**. SecWeb 2023: SecWeb Workshop 2023 co-located with IEEE S&P '23.

W.2. Issued for Abuse: Measuring the Underground Trade in Code Signing Certificate.

Kristián Kozák, Bum Jun Kwon, Doowon Kim, and Tudor Dumitraş.

WEIS 2018: The Workshop on the Economics of Information Security.

W.1. Lessons learned from using an online platform to conduct large-scale, online controlled security experiments with software developers. Christian Stransky, Yasemin Acar, Duc Cuong Nguyen, Dominik Wermke, Elissa M. Redmiles, **Doowon Kim**, Michael Backes, Simson Garfinkel, Michelle L. Mazurek, and Sascha Fahl.

CSET 2017: Workshop on Cyber Security Experimentation and Test.

#### **Refereed Posters and Demos**

P.5. Poster: Analysis of Reused Private Keys in the Code Signing PKI.

Doowon Kim, S. Gokberk Karaca and Tudor Dumitras.

NDSS 2019: Network and Distributed System Security Symposium

P.4. An Inconvenient Trust: User Attitudes toward Security and Usability Tradeoffs for Key-Directory Encryption Systems.

Wei Bai, **Doowon Kim**, Moses Namara, Yichen Qian, Patrick Gage Kelley, Michelle L. Mazurek. Black Hat USA, August 2016.

#### P.3. You get where you're looking for: The impact of information sources on code security.

Yasemin Acar, Michael Backes, Sascha Fahl, **Doowon Kim**, Michelle L. Mazurek, and Christian Stransky.

SOUPS 2016: Symposium on Usable Privacy and Security. (Previously published paper.)

#### P.2. Adaptive Video Streaming over HTTP.

Doowon Kim, Jinsuk Baek, and Paul S. Fisher.

ACM SE 2014: The 49th ACM Southeast Conference.

#### P.1. Implementation of Framework to Identify Potential Phishing Websites.

Doowon Kim, Chaitanya Achan, Jinsuk Baek, and Paul S. Fisher.

IEEE ISI 2013: 2013 IEEE Intelligence and Security Informatics.

#### PROFESSIONAL ACTIVITIES

#### **Review Panel**

- [NSF] National Science Foundation Proposal Review Panelist 2023, 2024
- [NSF] National Science Foundation Graduate Research Fellowships Program (GRFP) Review Panelist 2025

## **Technical Program Committee**

- [CCS] ACM Conference on Computer and Communications Security 2021, 2024, 2025
- [NDSS] Network and Distributed System Security Symposium 2023, 2024, 2025
- [WWW] The Web Conference (security track) 2022
- [ACSAC] Annual Computer Security Applications Conference 2025
- [AsiaCCS] ACM Asia Conference on Computer and Communications Security 2022, 2023, 2024
- [Euro S&P] IEEE European Symposium on Security and Privacy 2023
- [RAID] International Symposium on Research in Attacks, Intrusions and Defenses 2021, 2022, 2023, 2024
- [SOUPS] Symposium on Usable Privacy and Security 2024
- [ISC] Network Traffic Measurement and Analysis Conference 2023
- [WiSec] ACM Conference on Security and Privacy in Wireless and Mobile Networks 2021, 2022
- [TMA] Network Traffic Measurement and Analysis Conference 2022, 2023, 2024
- [CODASPY] ACM Conference on Data and Application Security and Privacy 2021
- [ICICS] International Conference on Information and Communications Security 2021, 2022
- [WISA] World Conference on Information Security Applications 2022, 2023
- [MSN] International Conference on Mobility, Sensing and Networking 2021
- [CSET] Workshop on Cyber Security Experimentation and Test 2020, 2021
- [CheckMATE] Man-At-The-Middle Attacks Workshop 2021, 2022
- [WPES] Workshop on Privacy in the Electronic Society 2022
- [WebSec] SecWeb Workshop 2023

#### Journal Reviewer

- IEEE Transactions on Computers
- Institute of Electronics, Information and Communication Engineers

## Program Chair/Co-Chair

- Student Travel Grants Chair: ACM Conference on Security and Privacy in Wireless and Mobile Networks (WiSec)
- Scholarship/Mentorship Chair: Korean Computer Scientists and Engineers Association in America Technical Symposium 2022
- Publication Chair: IEEE Secure Development Conference (SecDev) 2022
- Student Travel Grants Chair: ACM Conference on Computer and Communications Security (CCS) 2021
- Poster Session Chair: Korean Computer Scientists and Engineers Association in America Technical Symposium 2021

#### **External Reviewer**

- ACM Conference on Computer and Communications Security (CCS) 2017, 2018, 2019
- The Network and Distributed System Security Symposium (NDSS) 2018, 2019, 2020
- IEEE Symposium on Security and Privacy (S&P) 2018, 2019
- USENIX Security Symposium (USENIX Security) 2018
- Conference on Data and Application Security and Privacy (CODASPY) 2020
- Research in Attacks, Intrusions and Defenses (RAID) 2018, 2019

#### **TEACHING**

• COSC 469/569: Human Factors in Cybersecurity, UTK, Instructor.	Fall 2024
COSC 366: Introduction to Cybersecurity, <i>UTK</i> , Instructor.	Spring 2024
• COSC 469/569: Human Factors in Cybersecurity, UTK, Instructor.	Fall 2023
• COSC 466/566: Software Security, <i>UTK</i> , Instructor.	Spring 2023
• COSC 469/569: Human Factors in Cybersecurity, UTK, Instructor.	Fall 2022
COSC 366: Introduction to Cybersecurity, UTK, Instructor.	Spring 2021
• COSC 469/569: Human Factors in Cybersecurity, UTK, Instructor.	Fall 2021
COSC 366: Introduction to Cybersecurity, UTK, Instructor.	Spring 2020
• COSC 469/569: Human Factors in Cybersecurity, UTK, Instructor.	Fall 2020
• CMSC 131: Object-Oriented Programming, UMD, Teaching Assistant.	Spring 2017
• CMSC 131: Object-Oriented Programming, UMD, Teaching Assistant.	Spring 2015

#### SELECTED PRESS

- [Ars Technica] Hackers infect multiple game developers with advanced malware, May 2020.
- [Elastic] Introducing Elastic Endpoint Security, Oct. 2019.
- [Venafi] Dark Web e-Shops Now Distributing Code Signing Certificates for Malware, Jul. 2018.
- [Help Net Security] Underground vendors can reliably obtain code signing certificates from CAs, Jun. 2018.
- [The Register] 'No questions asked' Windows code cert slingers 'fuel trade' in digitally signed malware, Jun 2018.
- [MUO] What Is Code-Signed Malware and How Do You Avoid It?, May, 2019.
- [Security Affairs] Study confirms the trade of code-signing certificates is a flourishing business, Mar. 2018
- [The Register] Suspicious cert-sellers give badware a good name for just a few thousand bucks, Mar. 2018.
- [ENISA] Valid Digital Certificates Code Signing Malware, Jun. 2018.

- [Schneier on Security] Signed Malware, Feb. 2018.
- [Intezer] Don't Be Fooled By Malware Signed with Stolen Certificates How Intezer Analyze™ Detects Major Breaches in Security, Dec. 2017.
- [Cyber Defense Magazine] Malware signed with stolen Digital code-signing certificates continues to bypass security software, Nov. 2017
- [Tech Target] Certificate authority business undergoes major changes, Nov. 2017.
- [Security Intelligence] Public Key Infrastructure Concerns Raise Questions Over Internet Authentication System, Nov. 2017.
- [Hacker News] The Rise of Super-Stealthy Digitally Signed Malware Thanks to the Dark Web, Nov. 2017.
- [Security Affairs] Malware signed with stolen Digital code-signing certificates continues to bypass security software, Nov. 2017.
- [Systweak] Legitimate digitally signed certificates for sale on dark web, Nov. 2017.
- [CPS-VO] Hackers Abusing Digital Certs Smuggle Malware past Security Scanners, Nov. 2017.
- [TechWire Asia] How US\$1000 (or nothing) buys malware access to your network, Nov. 2017.
- [ThreatPost] Assessing Weaknesses in Public Key Infrastructure, Nov. 2017.
- [Ars Technica] Stuxnet-style code signing is more widespread than anyone thought, Nov. 2017.
- [HashedOut] Compromised Code Signing Certificates Aiding Hackers Spread Malware, Nov. 2017.
- [The Register] Hackers abusing digital certs smuggle malware past security scanners. Nov. 2017.

## **INVITED TALKS**

<ul> <li>Certified Malware and Phishing Attacks. Federal Bureau of Investigation (FBI), Knoxville, TN, USA  Intro to Computer Science and Cybersecurity. Bearden High School, Knoxville, TN, USA  Apr. 20  Understanding of Security Threats in the PKIs. Soongsil University, Korea (Remote)  Security Analysis on Practices of Certificate Authorities in the HTTPS Phishing Ecosystem. AsiaCCS 2021, China (Remote)  Intro to Computer Science and Cybersecurity. Bearden High School, Knoxville, TN, USA  Its 1.3 in Practice: How TLS 1.3 Contributes to the Internet. The Web Conference 2021 (Formerly WWW), Virtual  The Code-Signing PKI and Abuse, Research talk at University of Texas at Dallas, TX, USA  How Usability of Crypto APIs and Information Sources Impact Code Security. Korean Workshop on Usable Security (K-USEC), South Korea Stony Brook University Korea (SUNY Korea), South Korea  Stony Brook University, South Korea Jan. 20  End-to-end Measurements of Security Threats in the Code Signing PKI. Yonsei University, South Korea Jan. 20  Langkyunkwan University (SKKU), South Korea Jan. 20  Jan</li></ul>		
<ul> <li>Federal Bureau of Investigation (FBI), Knoxville, TN, USA</li> <li>Intro to Computer Science and Cybersecurity. Bearden High School, Knoxville, TN, USA</li> <li>Understanding of Security Threats in the PKIs. Soongsil University, Korea (Remote)</li> <li>Security Analysis on Practices of Certificate Authorities in the HTTPS Phishing Ecosystem. AsiaCCS 2021, China (Remote)</li> <li>Intro to Computer Science and Cybersecurity. Bearden High School, Knoxville, TN, USA</li> <li>TLS 1.3 in Practice: How TLS 1.3 Contributes to the Internet. The Web Conference 2021 (Formerly WWW), Virtual</li> <li>Apr. 20</li> <li>The Code-Signing PKI and Abuse, Research talk at University of Texas at Dallas, TX, USA</li> <li>How Usability of Crypto APIs and Information Sources Impact Code Security. Korean Workshop on Usable Security (K-USEC), South Korea Stony Brook University Korea (SUNY Korea), South Korea</li> <li>End-to-end Measurements of Security Threats in the Code Signing PKI. Yonsei University, South Korea Korea University, South Korea Jan. 20</li> <li>End-to-end Measurements of Security Threats in the Code Signing PKI. Yonsei University, South Korea Jan. 20</li> <li>End-to-end University, South Korea Jan. 20</li> <li>End-to-end University, South Korea Jan. 20</li> </ul>		Aug. 2022
<ul> <li>Bearden High School, Knoxville, TN, USA</li> <li>Understanding of Security Threats in the PKIs. Soongsil University, Korea (Remote)</li> <li>Security Analysis on Practices of Certificate Authorities in the HTTPS Phishing Ecosystem. AsiaCCS 2021, China (Remote)</li> <li>Intro to Computer Science and Cybersecurity. Bearden High School, Knoxville, TN, USA</li> <li>TLS 1.3 in Practice: How TLS 1.3 Contributes to the Internet. The Web Conference 2021 (Formerly WWW), Virtual</li> <li>Apr. 20</li> <li>The Code-Signing PKI and Abuse, Research talk at University of Texas at Dallas, TX, USA</li> <li>How Usability of Crypto APIs and Information Sources Impact Code Security. Korean Workshop on Usable Security (K-USEC), South Korea Jan. 20 Stony Brook University Korea (SUNY Korea), South Korea</li> <li>End-to-end Measurements of Security Threats in the Code Signing PKI. Yonsei University, South Korea Jan. 20 Jan. 20</li></ul>		May 2022
<ul> <li>Soongsil University, Korea (Remote)</li> <li>Security Analysis on Practices of Certificate Authorities in the HTTPS Phishing Ecosystem. AsiaCCS 2021, China (Remote)</li> <li>Intro to Computer Science and Cybersecurity. Bearden High School, Knoxville, TN, USA</li> <li>TLS 1.3 in Practice: How TLS 1.3 Contributes to the Internet. The Web Conference 2021 (Formerly WWW), Virtual</li> <li>Apr. 20</li> <li>The Code-Signing PKI and Abuse, Research talk at University of Texas at Dallas, TX, USA</li> <li>How Usability of Crypto APIs and Information Sources Impact Code Security. Korean Workshop on Usable Security (K-USEC), South Korea Stony Brook University Korea (SUNY Korea), South Korea</li> <li>End-to-end Measurements of Security Threats in the Code Signing PKI. Yonsei University, South Korea Jan. 20</li> <li>End-to-end Measurements of Security Threats in the Code Signing PKI. Yonsei University, South Korea Jan. 20</li> <li>End-to-end Measurements of Security Threats in the Code Signing PKI. Yonsei University, South Korea Jan. 20</li> <li>End-to-end Measurements of Security Threats in the Code Signing PKI. Yonsei University, South Korea Jan. 20</li> <li>End-to-end Measurements of Security Threats in the Code Signing PKI. Yonsei University, South Korea Jan. 20</li> </ul>		Apr. 2022
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<ul> <li>Bearden High School, Knoxville, TN, USA</li> <li>TLS 1.3 in Practice: How TLS 1.3 Contributes to the Internet.  The Web Conference 2021 (Formerly WWW), Virtual  Apr. 20</li> <li>The Code-Signing PKI and Abuse, Research talk at University of Texas at Dallas, TX, USA  How Usability of Crypto APIs and Information Sources Impact Code Security.  Korean Workshop on Usable Security (K-USEC), South Korea  Stony Brook University Korea (SUNY Korea), South Korea  Find-to-end Measurements of Security Threats in the Code Signing PKI.  Yonsei University, South Korea  Korea University, South Korea  Sungkyunkwan University (SKKU), South Korea  Dec. 20</li> </ul>		Jun. 2021
<ul> <li>The Web Conference 2021 (Formerly WWW), Virtual         <ul> <li>The Code-Signing PKI and Abuse, Research talk at University of Texas at Dallas, TX, USA</li> <li>How Usability of Crypto APIs and Information Sources Impact Code Security.</li></ul></li></ul>		May 2021
<ul> <li>How Usability of Crypto APIs and Information Sources Impact Code Security.         <i>Korean Workshop on Usable Security (K-USEC)</i>, South Korea</li></ul>		Apr. 2021
<ul> <li>Korean Workshop on Usable Security (K-USEC), South Korea         <ul> <li>Stony Brook University Korea (SUNY Korea), South Korea</li> <li>End-to-end Measurements of Security Threats in the Code Signing PKI.</li></ul></li></ul>	• The Code-Signing PKI and Abuse, Research talk at University of Texas at Dallas, TX, USA	Jun. 2020
Yonsei University, South Korea Jan. 20 Korea University, South Korea Jan. 20 Sungkyunkwan University (SKKU), South Korea Dec. 20	Korean Workshop on Usable Security (K-USEC), South Korea	Jan. 2019 Jan. 2019
	Yonsei University, South Korea Korea University, South Korea Sungkyunkwan University (SKKU), South Korea	Jan. 2019 Jan. 2019 Dec. 2018 Aug. 2018

	Korea Advanced Institute of Science and Technology (KAIST), South Korea Electronics and Telecommunications Research Institute (ETRI), South Korea	Aug. 2018 Aug. 2018
•	The Broken Shield: Measuring Revocation Effectiveness in the Windows Code-Signing PKI. <i>USENIX Security Symposium</i> , MD, USA	Aug. 201
•	Certified Malware: Measuring Breaches of Trust in the Windows Code-Signing PKI. <i>ACM CCS Conference</i> , Dallas, TX, USA	Oct. 2017
•	You Get Where You're Looking For: The Impact of Information Sources on Code Security. HCIL Annual Symposium, MD, USA Bowie State University, MD, USA	May 2016 Apr. 2016

## **INDUSTRY IMPACT**

- Transient revoked code signing certificates in CRLs (USENIX Sec '18): a Certificate Authority fixed the bug in its dissemination system.
- Malformed digital signatures (CCS '17): two Anti-Virus companies fixed the flaw of not checking (even incorrectly) signed malware.

## **ADVISING**

#### **Graduate Students**

- Kyungchan Lim (PhD CS; 2021 present): IMC'24, WWW'24, WWW'25, and WWW'25
- Fujiao Ji (PhD CS; 2022 present): USENIX Sec'25, WWW'25
- Lu Liu (PhD CS; 2023 present)
- Jaehwan Park (PhD CS; 2024 present): WWW'24

## **Undergraduate Students**

- Mason Hyman (2023 present)
- Jennifer Maranville (2023 present)
- Keith Scroggs (2024 present)
- Emily Vo (2024 present)
- Jackson Weil (2024 present)
- Austin Smith (2024 present)
- Laura Smith (2024 present)
- Sandy Fata (2024 present)
- Makenzie Johnson (2024 present)
- Kol Dorney (2024 present)
- Henry Hodge (2024 present)
- Grant Alderson (2024 present)
- Neela Baker (2024 present)

## **Visiting Scholars & Interns**

- Kiho Lee (2024 present)
- Woonghee Lee (Summer 2022)

## **Previous Students**

- Autumn Henderson (BS, 2022), now at Cadre5
- Zachary Ables (BS, 2021), now at NTT Data
- Megan Stanton (BS, 2021), now at CGI Federal
- Madeline Phillips (MS, 2022)
- Mike Hughes (2022 2022), now at law enforcement
- Anthony Roman (2022 2022)
- Cole Elliott (2022 2022)
- Reed Semmel (2022 2022), now at Nucor Steel
- Hunter Price (2021 2022), now a Ph.D. student at UTK
- Andrei Cozma (2021 2022), now a Ph.D. student at UTK
- Matthew Dixson (2021 2023), now at ORNL
- Parker Collier (2022 2023)

#### **Committees**

- Shreenandan Rajarathnam (PhD, iSchool) Dissertation Committee
- Matthew Dixson (MS, 2023) Major Advisor
- John Sadik (MS, 2023)
- Christopher (Blake) Childress (MS, 2023)
- Sean Oesch (PhD, 2021)
- Austin Saporito (MS, 2021)
- Nima Tayefeh (MS, 2024) Major Advisor
- Robert Williams (MS, 2024) Major Advisor
- Zachary Williams (MS, 2024) Major Advisor
- Parker Collier (MS, 2024)
- Clay Shubert (MS, 2024)

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