Haehyun Cho

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○ EDUCATION

Ph.D., Computer Science Aug 2016 - Present
Arizona State University, Tempe, AZ

M.S., Computer Science and Engineering Feb 2015
Soongsil University, Seoul, Korea

· Thesis: *Mobile App Tamper Detection Scheme Based on Core Code Attestation*

B.S., Computer Science and Engineering Feb 2013
Soongsil University, Seoul, Korea

○ PUBLICATIONS

- **Conference Papers with Proceedings (refereed)**

1. **Haehyun Cho**, Jinbum Park, Donguk Kim, Ziming Zhao, Yan Shoshitaishvili, Adam Doupé, and Gail-Joon Ahn, "SmokeBomb: Effective Mitigation Method against Cache Side-channel Attacks on the ARM Architecture," *in Proceedings of the 18th ACM International Conference on Mobile Systems, Applications, and Services* (MobiSys), Toronto, Canada, Jun 2020. (19% acceptance rate.)

2. Penghui Zhang, **Haehyun Cho**, Ziming Zhao, Adam Doupé, and Gail-Joon Ahn, "iCORE: Continuous and Proactive Extrospection on Multi-core IoT Devices," *in Proceedings of the 34th ACM/SIGAPP Symposium On Applied Computing* (SAC), Limassol, Cyprus, Apr 2019. (24% acceptance rate.)

3. **Haehyun Cho**, Penghui Zhang, Donguk Kim, Jinbum Park, Choong-Hoon Lee, Ziming Zhao, Adam Doupé, and Gail-Joon Ahn, "Prime+Count: Novel Cross-world Covert Channels on ARM TrustZone," *in Proceedings of the 34th Annual Computer Security Applications Conference* (ACSAC), San Juan, Puerto Rico, USA, Dec 2018. (20% acceptance rate.)

4. Jaejong Baek, Sukwha Kyung, **Haehyun Cho**, Ziming Zhao, Yan Shoshitaishvili, Adam Doupé, and Gail-Joon Ahn, "Wi Not Calling: Practical Privacy and Availability Attacks in Wi-Fi Calling," *in Proceedings of the 34th Annual Computer Security Applications Conference* (ACSAC), San Juan, Puerto Rico, USA, Dec 2018. (20% acceptance rate.)

- **Journal Papers (refereed)**

1. **Haehyun Cho**, Jeong Hyun Yi, and Gail-Joon Ahn. "DexMonitor: Dynamically Analyzing and Monitoring Obfuscated Android Applications," *IEEE Access*, Volume 6, pp.71229–71240 Nov 2018. (IF: 3.557)

2. **Haehyun Cho**, Jiwoong Bang, Myeongju Ji, and Jeong Hyun Yi, "Mobile application tamper detection scheme using dynamic code injection against repackaging attacks," *The Journal of Supercomputing*, Vol.72, No.9, pp.3629–3645, Sep 2016. (IF: 1.532)

3. Yiming Jing, Gail-Joon Ahn, Hongxin Hu, **Haehyun Cho**, and Ziming Zhao, "TRIPLEMON: A Multi-layer Security Framework for Mediating Inter-Process Communication on Android," *Journal of Computer Security*, Vol.24, No.4, pp.405–426, Sep 2016.

4. **Haehyun Cho**, Jiwoong Bang, Myeongju Ji, and Jeong Hyun Yi, "Anti-debugging scheme for protecting mobile apps on android platform," *The Journal of Supercomputing*, Vol.72, No.1, pp.232–246, Jan 2016. (IF: 1.532)

5. Jongwon Choi, **Haehyun Cho**, and Jeong Hyun Yi, "Personal Information Leaks with Automatic Login in Mobile Social Network Services," *Entropy Journal*, Vol.17, No.6, pp.3947–3962, Jun 2015. (IF: 1.743)

• **Invited Paper**

1. Bernard Ngabonziza, Daniel Martin, Anna Bailey, **Haehyun Cho**, and Sarah Martin. "Trustzone explained: Architectural features and use cases." *in Proceedings of the IEEE 2nd International Conference on Collaboration and Internet Computing (CIC)*, Pittsburgh, PA, Nov 2016.

○ PATENTS

1. Jeong Hyun Yi, **Haehyun Cho**, Jiwoong Bang, and Myeongju Ji, "Application Code Analysis Apparatus and Method for Code Analysis Using the Same," KR Patent, Patent No.: 10–1557455, Sep 2015.
2. Jeong Hyun Yi and **Haehyun Cho**, "User Terminal to Detect the Tampering of the Applications Using Core Code and Method for Tamper Detection Using The Same," KR Patent, Patent No.: 10–1518689, Apr 2015.

○ EXPERIENCE SUMMARY

SEFCOM - Security Engineering for Future Computing — Graduate Research Associate
Arizona State University, Tempe, AZ
Mar 2016 - Present

Qualcomm Security Product Initiative (QPSI) — PhD Intern
Qualcomm, San Diego, CA
Mar 2019 - Aug 2019

Cyber Security Research Center — Research Associate
Soongsil University, Seoul, Korea
Mar 2015 - Feb 2016

Cyber Security Research Center — Graduate Research Associate
Soongsil University, Seoul, Korea
Mar 2013 - Feb 2015

Republic of Korea Army
Feb 2007 - Feb 2009

○ RESEARCH/PROJECT EXPERIENCE

ASU—Samsung Research Membership Projects
Source: Samsung Research
Jan 2017 - Present

Development of Security Technology for Mobile System Software
Source: National Research Foundation of Korea
Aug 2014 - Feb 2017

Vulnerability Analyses and Countermeasures of Mobile Obfuscation
Source: Samsung Electronics
Nov 2013 - Sep 2014

Credential Management for Smart Device Apps
Source: Supreme Prosecutors' Office of Korea
Aug 2013 - Jan 2014

○ HONORS AND AWARDS

• **The CIDSE Doctoral Fellowship**
by the School of Computing, Informatics, and Decisions Systems Engineering (CIDSE), Arizona State University, Mar 2020.

- **The Cybersecurity Fellowship**
  by the School of Computing, Informatics, and Decisions Systems Engineering (CIDSE), Arizona State University, Aug 2019.
- **Scholarship for Human Resources Development**
  by Soongsil University, Seoul, Korea, Oct 2018.
- **Distinguished Poster Award**
  "SeCore: Continuous Extrospection with High Visibility on Multi-core ARM Platforms," by the Organizing Committee of the 8th ACM Conference on Data and Application Security and Privacy (CODASPY '18).
- **Academic Excellence Scholarship**
  by Soongsil University, Seoul, Korea.
- **Travel Grant**
  by the 25th ACM Conference on Computer and Communications Security (CCS '18).

○ INVITED TALKS

- **"Introduction and Security Concerns of Cache on ARM architecture"**
  · Samsung Research, Seoul, Korea, Jun 2018.
  · Soongsil University, Seoul, Korea, May 2018.

○ TEACHING EXPERIENCE

- **Teaching Assistant**
  · System Security Principles, Samsung Electronics, Jan 2015.
  · Android Security, LG Electronics, Jul 2014.
  · System Security Principles, Samsung Electronics, Jan 2014.
  · Network Security and Practice, Samsung Electronics, Aug 2013.

○ SERVICE

- **External Reviewer**
  · 2019 ACM Conference on Computer and Communications Security (CCS)
  · 2019 ACM Conference on Data and Application Security and Privacy (CODASPY)
  · 2018 ACM Conference on Computer and Communications Security (CCS)
  · 2018 European Symposium on Research in Computer Security (ESORICS)
  · 2017 ACM Conference on Computer and Communications Security (CCS)
  · 2017 ACM Asia Conference on Computer and Communications Security (AsiaCCS)
  · 2017 ACM Conference on Data and Application Security and Privacy (CODASPY)

○ TECHNICAL STRENGTHS

- **Skills & Tools** — System Programming, Program Analysis, LLVM
- **Computer Languages** — C, C++, Python, Java, Assemblies
- **Operating Systems** — Linux, OP-TEE OS, Android, Tizen, Windows
- **Computer Architectures** — ARM, Intel

○ REFERENCES

Gail-Joon D. Ahn E-mail: gahn@asu.edu

Professor of Computer Science
Fulton Entrepreneurial Professor
Director, Center for Cybersecurity and Digital Forensics
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