Geumhwan Cho

Personal Data

Gender:	Male
Citizenship:	South Korea
Address:	Sungkyunkwan University, Suwon, Republic of Korea
Tel:	+82 31-299-4104
Mobile:	+82 10-9886-5325
email:	geumhwan@skku.edu / geumhwancho@gmail.com

Status

September 2014 – *present*
PhD Candidate in Department of Computer Science and Engineering,
College of Information and Communication Engineering, Sungkyunkwan University
Supervisor: Prof. Hyoungshick Kim

Education

2011.3–2013.2   **M.S.** in Department of Computer Engineering,
Kyung Hee University, Korea
Supervisor: Prof. Sungyoung Lee
Thesis: Activity Recognition and Energy-Efficient Optimization based on
Accelerometer Sensor in Smartphone Environment

2004.3–2011.2   **B.S.** in Department of Communication Engineering,
Cheongju University, Korea
Supervisor: Prof. Nam-Soo Kim

Research Interests

Usable security
User privacy
User authentication
Mobile security

Experience

- **2014.9–present:** Department of Computer Science and Engineering, College of Information and Communication Engineering, Sungkyunkwan University, Korea
PhD Candidate – Security Engineering Laboratory

- **2011.3–2013.2:** Department of Computer Engineering, College of Electronics and Information, Kyung Hee University, Korea
Research Assistant – Ubiquitous Computing Laboratory

Teaching Experience

- Teaching Assistant: Engineering Computer Programming (GEDB030), Department of Computer Science and Engineering, Sungkyunkwan University, Fall 2018. Undergraduate level course for understanding of computer security technology lectured by Yungyung Cheong.

- Teaching Assistant: Security Engineering (ECE5967), Department of Computer Science and Engineering, Sungkyunkwan University, Spring 2018. Graduate level course for understanding of computer security technology lectured by Hyoungshick Kim.

- Teaching Assistant: Introduction to Data Structure (SWE2015), Department of Software, Sungkyunkwan University, Fall 2017. Undergraduate level course on the introduction to data structures lectured by Hyoungshick Kim.

- Teaching Assistant: Introduction to Data Structure (SWE2015), Department of Software, Sungkyunkwan University, Spring 2017. Undergraduate level course for introducing to data structures lectured by Hyoungshick Kim.

- Teaching Assistant: Data Structure (ICE2002), Department of Computer Science and Engineering, Sungkyunkwan University, Fall 2016. Undergraduate level course for data structures lectured by Hyoungshick Kim.

Appointments

- **2015:** Member of Organizing Committee In International Conference on Software Security and Assurance (ICSSA)

Awards and Grants

- **2018:** The 3rd prize of the cyber security competition.
- **2017:** NAVER Ph.D. Fellowship Award

Technical/Special Skills

OS: Windows and Linux (Ubuntu)
Programming: C and Python
Simulation and Math package: Matlab and R
Languages: English and Korean (native language)

Publications

- **Refereed Publications**

  - Humberto Cervantes, Rick Kazman, Jungwoo Ryoo, Junsung Cho, **Geumhwan Cho**, Hyoungshick Kim and Jina Kang, "Data-driven Selection of Security Application Frameworks During Architectural Design", HICSS: The 52nd Hawaii International Conference on System Sciences, 2019.

  - DaeHun Nyang, Hyoungshick Kim, Woojoo Lee, Sung-bae Kang, **Geumhwan Cho**, Mun-Kyu Lee and Aziz Mohaisen, "Two-Thumbs-Up: Physical Protection for PIN Entry Secure against Recording Attacks", Computers & Security, Volume 78, Pages 1-15, September 2018.

  - **Geumhwan Cho**, Jusop Choi, Hyoungshick Kim, Sangwon Hyun, Jungwoo Ryoo, "Threat modeling and analysis of voice assistant applications", WISA: The 19th

World Conference on Information Security Applications, Jeju Island, Korea, 2018 (acceptance rate: 11/44 = 25%).

– Sangwon Hyun, Junsung Cho, **Geumhwan Cho** and Hyoungshick Kim, "Design and Analysis of Push Notification-Based Malware on Android", Security and Communication Networks, Volume 2018, Article ID 8510256, 12 pages, July 2018.

– Ian Oakley, Jun Ho Huh, Junsung Cho, **Geumhwan Cho**, MD. Rasel Islam and Hyoungshick Kim, "The Personal Identification Chord: A Four Button Authentication System for Smartwatches", ASIACCS: The 11th ACM Asia Conference on Computer and Communications Security, Incheon, Korea, 2018 (acceptance rate: 52/310 = 17%).

– Junsung Cho, **Geumhwan Cho**, Sangwon Hyun and Hyoungshick Kim, "Open Sesame! Design and Implementation of Backdoor to Secretly Unlock Android Devices", MobiSec: The 2nd International Symposium on Mobile Internet Security, Jeju Island, Korea, 2017.

– Soyoung Kim, Sora Lee, **Geumhwan Cho**, Muhammad Ejaz Ahmed, Jaehoon Paul Jeong and Hyoungshick Kim, "Preventing DNS amplification attacks using the history of DNS queries with SDN", ESORICS: The 22nd European Symposium on Research in Computer Security, Oslo, Norway, 2017 (acceptance rate: 54/339 = 16%).

– **Geumhwan Cho**, Jun Ho Huh, Junsung Cho, Seongyeol Oh, Youngbae Song and Hyoungshick Kim, "SysPal: System-guided Pattern Locks on Android", S&P: The 38th IEEE Symposium on Security and Privacy, San Jose, USA, 2017 (acceptance rate: 60/419 = 14.3%).

– Junsung Cho, **Geumhwan Cho**, Sangwon Hyun and Hyoungshick Kim, "Design of Backdoor on Android Devices", S&P: The 38th IEEE Symposium on Security and Privacy (Poster), San Jose, USA, 2017.

– Seunghun Cha, Jaewoo Park, **Geumhwan Cho**, Jun Ho Huh and Hyoungshick Kim, "WiPING: Wi-Fi signal-based PIN Guessing attac", CCS: The 23rd ACM Conference on Computer and Communications Security (Poster), Vienna, Austria, 2016.

– **Geumhwan Cho**, Junsung Cho, Youngbae Song, Donghyun Choi and Hyoungshick Kim, "Combating online fraud attacks in mobile-based advertising", EURASIP Journal on Information Security, Vol. 2016(1), 2016.

– **Geumhwan Cho**, Junsung Cho, Youngbae Song and Hyoungshick Kim, "An empirical study of click fraud in mobile advertising networks", IWCC: The 4th Workshop on Cyber Crime held in conjunction with ARES, Toulouse, France, 2015.

– Junsung Cho, **Geumhwan Cho** and Hyoungshick Kim, "Keyboard or Keylogger?: a security analysis of third-party keyboards on Android", PST: The 13rd International Conference on Privacy, Security and Trust, Izmir, Turkey, 2015.

– Youngbae Song, **Geumhwan Cho**, Seongyeol Oh, Hyoungshick Kim and Jun Ho Huh, "On the Effectiveness of Pattern Lock Strength Meters – Measuring the Strength of Real World Pattern Locks", CHI: The 33rd ACM SIGCHI Conference on Human Factors in Computing Systems, Seoul, Korea, 2015 (acceptance rate: 565/2435 = 23%).

– Jaehoon Jeong, Jihyeok Seo, **Geumhwan Cho**, Hyoungshick Kim and Jung-Soo Park, "A Framework for Security Services Based on Software-Defined Networking", DC2: The 2nd Workshop on Device Centric Cloud held in conjunction with IEEE AINA, Gwangju, Korea, 2015.

• **Patents**

- Hyoungshick Kim, **Geumhwan Cho**, Junsung Cho, "Secure Drone communication protocol ", Korea Patent application (10-2017-0168298), Dec. 2017.

- **Geumhwan Cho**, Junsung Cho, Hyoungshick Kim, "METHOD, APPARATUS, AND SYSTEM FOR AUTOMATICALLY GENERATING RULE FOR DETECTING VIRUS CODE, AND COMPUTER READABLE RECORDING MEDIUM FOR RECIRING THE SAME", Korea Patent (10-2017-0024455), Feb. 2017.

- **Geumhwan Cho**, Seongyeol Oh, Youngbae Song, Jun Ho Huh and Hyoungshick Kim, "Pattern generating method for pattern lock", Korea Patent (10-2016-0114369), Sep. 2016.

- Tai-Myoung Chung, Hyoungshick Kim, KIM, Nam-Uk Kim, Jun-Kwon Jung, **Geumhwan Cho** and Youngbae Song, "Cyber inspection system and method using SDN", Korea Patent application (10-2015-0000), Dec. 2015.

References

Hyoungshick Kim   hyoung@skku.edu
Assistant Professor, Sungkyunkwan University, Suwon, Korea

Updated by February 15, 2019