

Insu Yun

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Georgia Institute of Technology,
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RESEARCH INTERESTS

Binary analysis, system security and applied cryptography.

EDUCATION

Georgia Institute of Technology

Aug. 2015 –

Ph.D. in Computer Science

Advisor: Dr. Taesoo Kim

Korea Advanced Institute of Science and Technology (KAIST)

Sep. 2008 – Feb. 2015

B.S. in Computer Science & Mathematics

PUBLICATIONS

- Automatic Techniques to Systematically Discover New Heap Exploitation Primitives (to appear)**
Insu Yun, Dhaval Kapil, and Taesoo Kim
Proceedings of the 29th USENIX Security Symposium (Security 2020)
Boston, MA, August 2020
- Compromising the macOS kernel through Safari by chaining six vulnerabilities (to appear)**
Yonghwi Jin, Jungwon Lim, and Insu Yun
Black Hat USA Briefings (Black Hat USA 2020)
Las Vegas, NV, August 2020
- Fuzzing JavaScript Engines with Aspect-preserving Mutation**
Soyeon Park, Wen Xu, Insu Yun, Daehee Jang, and Taesoo Kim
Proceedings of the 41st IEEE Symposium on Security and Privacy (Oakland 2020)
San Francisco, CA, May 2020
- REPT: Reverse Debugging of Failures in Deployed Software**
Weidong Cui, Xinyang Ge, Baris Kasikci, Ben Niu, Upamanyu Sharma, Ruoyu Wang, and Insu Yun (alphabetical)
Proceedings of the 13th USENIX Symposium on Operating Systems Design and Implementation (OSDI 2018)
Carlsbad, CA, October 2018
• Jay Lepreau Best Paper Award
- QSYM: A Practical Concolic Execution Engine Tailored for Hybrid Fuzzing**
Insu Yun, Sangho Lee, Meng Xu, Yeongjin Jang, and Taesoo Kim
Proceedings of the 27th USENIX Security Symposium (Security 2018)
Baltimore, MD, August 2018
• Distinguished Paper Award
- AVPASS: Leaking and Bypassing Antivirus Detection Model Automatically**
Jinho Jung, Chanil Jeon, Max Wolotsky, Insu Yun, and Taesoo Kim
Black Hat USA Briefings (Black Hat USA 2017)
Las Vegas, NV, July 2017

7. CAB-Fuzz: Practical Concolic Testing Techniques for COTS Operating Systems

Su Yong Kim, Sangho Lee, **Insu Yun**, Wen Xu, Byoungyoung Lee, Youngtae Yun, and Taesoo Kim
Proceedings of the 2017 USENIX Annual Technical Conference (ATC 2017)
Santa Clara, CA, July 2017

8. APISan: Sanitizing API Usages through Semantic Cross-checking

Insu Yun, Changwoo Min, Xujie Si, Yeongjin Jang, Taesoo Kim, and Mayur Naik
Proceedings of the 25th USENIX Security Symposium (Security 2016)
Austin, TX, August 2016

• Nominated as a finalist in CSAW Best Applied Research Paper Award 2016

9. HDFI: Hardware-Assisted Data-Fow Isolation

Chengyu Song, Hyungon Moon, Monjur Alam, **Insu Yun**, Byoungyoung Lee, Taesoo Kim, Wenke Lee, and Yunheung Paek
Proceedings of the 37th IEEE Symposium on Security and Privacy (Oakland 2016)
San Jose, CA, May 2016

10. Analyzing Security of Korean USIM-based PKI Certificate Service

Shinjo Park, Suwan Park, **Insu Yun**, Dongkwan Kim, and Yongdae Kim
Proceedings of the 15th International Workshop on Information Security Applications (WISA 2014)
Jeju Island, Korea, August 2014

11. Kargus: A Highly-scalable Software-based Intrusion Detection System

Muhammad Jamshed, Jihyung Lee, Sangwoo Moon, **Insu Yun**, Deokjin Kim, Sungryoul Lee, Yung Yi, and KyoungSoo Park
Proceedings of the 19th ACM Conference on Computer and Communications Security (CCS 2012)
Raleigh, NC, October 2012

WORK EXPERIENCE

Microsoft Research, Research Intern, Seattle, WA May. 2017 – Aug. 2017

Contributed to REPT, a system that utilizes Intel Processor Trace to diagnose production failures

Mentor: Weidong Cui

Georgia Tech, Research Assistant, Atlanta, GA

Aug. 2015 –

Korean Cyber Command, Software Developer, Seoul, Korea

Apr. 2012 – Jan. 2014

Served for the mandatory military service

HONORS & AWARDS

Capture-the-flag(CTF) contests

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| DEFCON 26 CTF, 1st place (Team DEFKOR00T) | Aug. 2018 |
| DEFCON 24 CTF, 3rd place (Team DEFKOR) | Aug. 2016 |
| DARPA Cyber Grand Challenge (Team Disekt) | Aug. 2016 |
| DEFCON 23 CTF, 1st place (Team DEFKOR) | Aug. 2015 |
| Whitehat contest 2014 (Team SysSec) | Nov. 2014 |
| DEFCON 22 CTF, 10th place (Team GoN) | Aug. 2014 |
| SECCON CTF 2014, 1st place (TOEFL Beginner) | Feb. 2014 |
| Codegate CTF 2012, 3rd place (Team GoN) | Apr. 2012 |
| Secuinside CTF, 3rd place (Team GoN) | Oct. 2011 |
| ISEC CTF, 1st place (Team GoN) | Sep. 2011 |
| DEFCON 18 CTF, 3rd place (Team GoN) | Aug. 2010 |
| Codegate CTF 2010, 5th place (Team GoN) | Apr. 2010 |

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| KISA HDCON, Gold Medal, 2nd place (Team GoN) | May 2009 |
| Codegate CTF 2009, 4th place (Team GoN) | Apr. 2009 |

Bug Hunting

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| Pwn2Own Apple Safari with a kernel privilege escalation (\$70K), Zero Day Initiative | Mar. 2020 |
| Three integer overflow vulnerabilities in PHP (\$1,500), the Internet Bug Bounty | Jun. 2016 |
| An Integer Overflow in Python zipimport (\$1,000), the Internet Bug Bounty | Apr. 2016 |

Scholarships

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| National Research Foundation of Korea Scholarship for Undergraduate | Mar. 2008 – Dec. 2013 |
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TEACHING EXPERIENCE

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| Teaching Assistant, Information Security Lab – Official (CS8803 at Georgia Tech) | Fall 2018 |
| • Evaluation – Overall Effectiveness: 5 / 5 | |
| Teaching Assistant, Information Security Lab – Unofficial (CS8803 at Georgia Tech) | Fall 2017 |
| Teaching Assistant, Information Security Lab – Official (CS6265 at Georgia Tech) | Fall 2016 |
| • Evaluation – Overall Effectiveness: 4.9 / 5 | |
| Teaching Assistant, Information Security Lab – Unofficial (CS6265 at Georgia Tech) | Fall 2015 |
| Head Instructor, Information Security class for freshmen (KAIST) | Mar. 2009 – Aug. 2011 |