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

1. **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

2. **Fuzzing JavaScript Engines with Aspect-preserving Mutation (to appear)**
   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

3. **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**

4. **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**

5. **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

6. **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

7. **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**

8. **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

9. **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

10. **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

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

Bug Bounties

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

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

Teaching Experience

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