Seulbae Kim

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INTERESTS Software Security; Automated Vulnerability Detection; Binary Analysis

EDUCATION

Korea University, Seoul, Korea

- M.S. Candidate in Computer Science and Engineering — Mar 2016 – Aug 2018
  - GPA: 4.32 / 4.5
  - Thesis: Scalable Approach for Code Clone Detection and its Application in Practice
  - Advisor: Prof. Heejo Lee
  - Focus: Software vulnerability detection.
- B.S. in Computer Science and Engineering — Mar 2010 – Feb 2016
  - Major GPA: 4.05 / 4.5
  - Cumulative GPA: 3.75 / 4.5

Goyang Foreign Language High School, Kyeonggi, Korea

- English Major — Mar 2007 – Feb 2010

PUBLICATIONS

CONFERENCES

[1] Seulbae Kim, Seunghoon Woo, Heejo Lee and Hakjoo Oh, "VUDDY: A Scalable Approach for Vulnerable Code Clone Discovery," in *Proceedings of the 38th IEEE Symposium on Security and Privacy*, pages 595–614, May 2017. [pdf][presentation][code]

[2] Hyuckmin Kwon, Seulbae Kim, and Heejo Lee, "SIGMATA: Storage Integrity Guaranteeing Mechanism against Tampering Attempts for Video Event Data Recorders," in *Proceedings of the 7th International Multi-Conference on Complexity, Informatics and Cybernetics*, pages 101–106, Mar 2016. (Awarded best paper.) [pdf]

JOURNALS

[1] Seulbae Kim, and Heejo Lee, "Software systems at risk: An empirical study of cloned vulnerabilities in practice," *Computers & Security*, (to appear), Feb 2018.

[2] Hyuckmin Kwon, Seulbae Kim, and Heejo Lee, "SIGMATA: Storage Integrity Guaranteeing Mechanism against Tampering Attempts for Video Event Data Recorders," *Journal of Systemics, Cybernatics and Informatics*, Vol. 14, pp. 42-47, Aug 2016. [pdf]

TALKS & PRESENTATIONS

[1] "Automated Vulnerable Code Clone Detection in Open Source, and its Best Practice," invited talk at *Viterbi School of Engineering, University of Southern California*, Nov 2017. [post]

[2] "Case Study and Exercise on Software Vulnerability Analysis," lecture and training session presented at *the 3rd Korea Institute of Information Security and Cryptology (KIISC) Short-term Seminar*, Sep 2017.

[3] "VUDDY: A Scalable Approach for Vulnerable Code Clone Discovery," paper presented at *the 38th IEEE Symposium on Security and Privacy*, May 2017. [pdf]

[4] "IoTcube: An Automated Analysis Platform for Finding Security Vulnerabilities," poster session presented at *the 38th IEEE Symposium on Security and Privacy*, May 2017. [pdf]

[5] "SIGAMTA: Storage Integrity Guaranteeing Mechanism against Tampering Attempts for Video Event Data Recorders," paper presented at *the 7th International Multi-Conference on Complexity, Informatics and Cybernetics*, Mar 2017. [pdf]

PATENTS & PATENT APPLICATIONS

- Heejo Lee and Seulbae Kim, "Apparatus and Method for Detecting Code Cloning of Software," Korea Patent No. 10-1780233, filed Apr 2016, and issued Sep 2017.
- Heejo Lee and Seulbae Kim, "Apparatus and Method for Detecting Code Cloning of Software," U.S. Patent Application No. 15/492554, filed Apr 2017.

TEACHING EXPERIENCE

Theory of Computation, Korea University

- Teaching Assistant — Mar 2016 – Jun 2016
  - Supervisor: Prof. Heejo Lee
  - Covered the basics of the Theory of Computation, such as finite automata, context-free grammars, regular languages, and regular expressions.
  - Set and managed assignments of 93 undergraduate students, had office hours every week, answered questions in person and online, marked assignments, and proctored exams.

Trusted Computing, Korea University

- Teaching Assistant — Sep 2016 – Dec 2016
  - Supervisor: Prof. Heejo Lee
  - Covered the concurrent issues associated with promoting a secure computing environment.
  - Managed the assignments and scheduled the presentations of 20 graduate students.

AWARDS & SCHOLARSHIPS

- Best paper award, IMCIC, 2016.
- Honors Scholarships, Korea University, 2015

TECHNICAL SKILLS

Advanced Python, C, C++, HTML
Moderate Assembly Language, Java, JavaScript, PHP, CSS

PROFESSIONAL EXPERIENCE

CyLab, Carnegie Mellon University

- Short-term scholar (Visiting researcher) — Jan 2017 – Feb 2017
  - Project: Development of Vulnerability Discovery Technologies for IoT Software Security
  - Supervisor: Prof. David Brumley
  - Focus: Attack surface, Firmware analysis, IoT.

Center for Software Security and Assurance (CSSA), Korea University

- Core Researcher & Developer — Nov 2015 – Present
  - Project: Development of Vulnerability Discovery Technologies for IoT Software Security
  - Supervisor: Prof. Heejo Lee
  - Focus: White-box testing.

REFERENCES

- **Professor Heejo Lee**
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  Korea University
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  Korea University
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