

# Seunghoon Woo

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OPEN-SOURCE SOFTWARE SECURITY; SOFTWARE COMPOSITION ANALYSIS;  
SOFTWARE VULNERABILITY DETECTION; CODE CLONE DETECTION.

## EARNED DEGREES

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<b>M.S. &amp; Ph.D.</b> in Computer Science and Engineering, Korea University	Sep 2016 - Present
<b>B.S.</b> in Computer Science and Engineering, Korea University	Mar 2010 - Aug 2016

## WORKING EXPERIENCES

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<b>Center for Software Security and Assurance</b> , Researcher & Developer Developed automated software security analysis tools ( <a href="https://iotcube.net">https://iotcube.net</a> )	Mar 2016 - Present <i>Seoul, Korea</i>
<b>National University of Singapore</b> , Research Intern Developed a DDoS attack simulation tool (advisor: Prof. Minsuk Kang)	Jan 2017 - Feb 2017 <i>Singapore</i>
<b>Samsung Electronics</b> , Employee Developed a multi-platformed application for supporting Smart TVs	Dec 2015 - Jan 2016 <i>Suwon, Korea</i>
<b>DoDotDo (startup)</b> , Core Developer Developed a smart watch-based hotel management system	Jan 2015 - Sep 2015 <i>Seoul, Korea</i>
<b>Samsung Electronics</b> , Student Intern Developed a multi-platformed application for supporting Smart TVs	Jun 2014 - Aug 2014 <i>Suwon, Korea</i>

## PUBLICATIONS

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- [1] Haram Park, Carlos Nkuba Kayembe, **Seunghoon Woo**, and Heejo Lee, "L2Fuzz: Discovering Bluetooth L2CAP Vulnerabilities Using Stateful Fuzz Testing (TO APPEAR)," *In Proceedings of the 52nd IEEE/IFIP International Conference on Dependable Systems and Networks (DSN 2022)*, June 2022. (Acceptance rate: 18.7%)
- [2] Hyunji Hong, **Seunghoon Woo**, and Heejo Lee, "DICOS: Discovering Insecure Code Snippets from Stack Overflow Posts by Leveraging User Discussions," *In Proceedings of the Annual Computer Security Applications Conference (ACSAC 2021)*, December 2021. (Acceptance rate: 24.5%)
- [3] **Seunghoon Woo**, Dongwook Lee, Sunghan Park, Heejo Lee, and Sven Dietrich, "V0Finder: Discovering the Correct Origin of Publicly Reported Software Vulnerabilities," *In Proceedings of the 30th USENIX Security Symposium (Security 2021)*, August 2021. (Acceptance rate: 19.0%)
- [4] Seongkyeong Kwon, **Seunghoon Woo**, Gangmo Seong, and Heejo Lee, "OctoPoCs: Automatic Verification of Propagated Vulnerable Code Using Reformed Proofs of Concept," *In Proceedings of the 51st IEEE/IFIP International Conference on Dependable Systems and Networks (DSN 2021)*, June 2021. (Acceptance rate: 16.3%)
- [5] **Seunghoon Woo**, Sunghan Park, Seulbae Kim, Heejo Lee, and Hakjoo Oh, "CENTRIS: A Precise and Scalable Approach for Identifying Modified Open-Source Software Reuse," *In Proceedings of the 43rd International Conference on Software Engineering (ICSE 2021)*, May 2021. (Acceptance rate: 22.4%)
- [6] 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 (S&P 2017)*, May 2017. (Acceptance rate: 12.9%)
- [7] Seulbae Kim, **Seunghoon Woo**, Heejo Lee, and Hakjoo Oh, "Poster: IoTcube: an automated analysis platform for finding security vulnerabilities", *In 2017 IEEE Symposium on Poster presented at Security and Privacy (S&P Poster 2017)*, May 2017.

## PROJECTS

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<b>Project Manager</b> , International Joint Research Development of Automated Vulnerability Discovery Technologies for Blockchain Platform Security	Jun 2019 - Present
<b>Researcher &amp; Developer</b> , University of Southern California & LA City The Intelligent IoT Integrator (I3): LA Smart City Project	Nov 2017 - Present
<b>Main Researcher</b> Verifying Open-Source Software Reliability for Reinforcing Operating System Security	Apr 2020 - Oct 2020
<b>Main Researcher</b> Development of DNS-based Lightweight Framework for Addressing Abnormal Network Behaviors	May 2018 - Oct 2018
<b>Project Manager</b> , Office of Naval Research A Study of a DDoS-resilient Network Architecture through Traffic Classification and Isolation	Sep 2017 - Sep 2019
<b>Researcher &amp; Developer</b> , International Joint Research Development of Vulnerability Discovery Technologies for IoT Software Security	Feb 2016 - May 2018

## PATENT

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- [1] METHOD FOR IDENTIFYING OPEN-SOURCE SOFTWARE COMPONENTS AT THE SOURCE-CODE LEVEL, Heejo Lee and Seunghoon Woo (17525126, Nov 2021), APPLICATION, US
- [2] METHOD FOR IDENTIFYING OPEN-SOURCE SOFTWARE COMPONENTS AT THE SOURCE-CODE LEVEL, Heejo Lee and Seunghoon Woo (EP21202849.2, Oct 2021), APPLICATION, EUROPE
- [3] METHOD FOR IDENTIFYING OPEN-SOURCE SOFTWARE COMPONENTS AT THE SOURCE-CODE LEVEL, Heejo Lee and Seunghoon Woo (10-2021-0010585, Jan 2021), APPLICATION, KOREA

## OPEN-SOURCE CONTRIBUTIONS (SELECTED)

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<b>XPDF</b> , Fixing security vulnerabilities (CVE-2020-35376 assigned) <a href="https://www.xpdfreader.com">https://www.xpdfreader.com</a>	Dec 2020
<b>Redis</b> , Fixing security vulnerabilities (CVE-2020-14147 assigned) <a href="https://github.com/redis/redis">https://github.com/redis/redis</a>	Feb 2020
<b>Stepmania</b> , Fixing security vulnerabilities (CVE-2020-20412 assigned) <a href="https://github.com/stepmania/stepmania">https://github.com/stepmania/stepmania</a>	Sep 2019
<b>Godot</b> , Fixing security vulnerabilities <a href="https://github.com/godotengine/godot">https://github.com/godotengine/godot</a>	Jul 2019
<b>LibGDX</b> , Fixing security vulnerabilities <a href="https://github.com/libgdx/libgdx">https://github.com/libgdx/libgdx</a>	Jul 2019

## TALKS AND PRESENTATIONS (SELECTED)

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<b>IoTcube Conference 2021</b> Analysis of Reused Open-Source Software Components for Software Bill of Materials	Aug 2021
<b>USENIX Security 2021</b> , Paper Presentation V0Finder: Discovering the Correct Origin of Publicly Reported Software Vulnerabilities	Aug 2021
<b>ICSE 2021</b> , Paper Presentation CENTRIS: A Precise and Scalable Approach for Identifying Modified Open-Source Software Reuse	May 2021
<b>KIISC Online Short Course 2021</b> Verification Technology for Open-Source Software Security	Nov 2020

<b>IoTcube Conference 2019</b> Automatic Vulnerability Analysis Framework Applied to LA Smart City Projects	Aug 2019
<b>Workshop among Asian Information Security Labs (WAIS) 2018</b> Identifying Constituent OSS in Software through Code Similarity Detection	Jan 2018
<b>IEEE S&amp;P Poster 2017</b> Poster presentation: "IoTcube: an automated analysis platform for finding security vulnerabilities"	May 2017

#### HONORS (SELECTED)

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<b>Academic Scholarship</b> , Korea University	2010 2R, 2011 1R, 2013 2R
<b>Foreign Regular Course Major Study Scholarship</b> , Korea University	2013 2R
<b>National Excellence Scholarship (Science and Engineering)</b> , Korea University	2014 1R - 2015 2R
<b>BK21PLUS Scholarship</b> , Brain Korea 21	2017 1R - 2021 1R