Yuseok Jeon

Associate Professor of Computer Science and Engineering
Korea University

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Homepage : https://ysjeon.net/
Lab : https://s2-lab.github.io/

Education

Purdue University, West Lafayette, IN, USA — Aug. 2015 - Dec. 2020
Ph.D. in Computer Science
– Advisors: Prof. Mathias Payer and Prof. Byoungyoung Lee

POSTECH, Pohang, South Korea — Feb. 2008 - Feb. 2010
M.S. in Computer and Communication Engineering
– Advisor: Prof. Jong Kim

Inha University, Incheon, South Korea — Mar. 2003 - Aug. 2007
B.S. in Computer Science and Engineering

Professional Experience

Korea University, Seoul, South Korea — Mar. 2025 - Current
Associate Professor, Dept. of Computer Science and Engineering

UNIST, Ulsan, South Korea — Feb. 2021 - Feb. 2025
Assistant Professor, Dept. of Computer Science and Engineering

Purdue University, West Lafayette, IN, USA — Aug. 2015 – Dec. 2020
Graduate Research Assistant, Dept. of Computer Science

Intel Corporation, Hillsboro, OR, USA — May. 2018 – Aug. 2018
Graduate Intern, Platform Security Division

NEC Labs America, Princeton, NJ, USA — May. 2016 – Aug. 2016
Research Intern, Security Department

Samsung Electronics, Suwon, South Korea — Dec. 2013 – Jun. 2015
Research Engineer, Software Center

National Security Research Institute, Daejeon, South Korea — Feb. 2010 – Jun. 2013
Research Engineer, Cyber Technology Department

Publications

[1] **Intent-aware Fuzzing for Android Hardened Application**
Seongyun Jeong, Minseong Choi, Haehyun Cho, Seokwoo Choi, Hyungsub Kim, and Yuseok Jeon
ACM Conference on Computer and Communications Security 2025 (**CCS'25**)

[2] **Lightweight Concolic Testing via Path-Condition Synthesis for Deep Learning Libraries**
Sehoon Kim, Yonghyeon Kim, Dahyeon Park, Yuseok Jeon, Jooyong Yi, and Mijung Kim
IEEE/ACM International Conference on Software Engineering 2025 (**ICSE'25**)

[3] **CMASan: Custom Memory Allocator-aware Address Sanitizer**
Junwha Hong, Wonil Jang, Mijung Kim, Lei Yu, Yonghwi Kwon, and Yuseok Jeon
IEEE Symposium on Security and Privacy 2025 (**S&P'25**)

[4] **Type++: Prohibiting Type Confusion with Inline Type Information**
Nicolas Badoux, Flavio Toffalini, Yuseok Jeon, and Mathias Payer
Network and Distributed System Security 2025 (**NDSS'25**)

[5] **ERASAN: Efficient Rust Address Sanitizer**
Jiun Min*, Dongyeon Yu*, Seongyun Jeong, Dokyung Song, and Yuseok Jeon
IEEE Symposium on Security and Privacy 2024 (**S&P'24**) (*: co-first author)

[6] **On the Robustness of Graph Reduction Against GNN Backdoor**
Yuxuan Zhu, Michael Mandulak, Kerui Wu, George Slota, Yuseok Jeon, Ka-Ho Chow, and Lei Yu
ACM Workshop on Artificial Intelligence and Security 2024 (**AISec'24**) in conjunction with CCS

2024

[7] **DryJIN: Detecting Information Leaks in Android Applications**
Minseong Choi, Yubin Im, Steve Ko, Yonghwi Kwon, Yuseok Jeon, and Haehyun Cho
International Conference on ICT Systems Security and Privacy Protection 2024 (**IFIP SEC'24**)

[8] **(Pspray: Timing Side-Channel based Linux Kernel Heap Exploitation Technique**
Yoochan Lee, Jinhan Kwak, Junesoo Kang, Yuseok Jeon, and Byoungyoung Lee
USENIX Security Symposium 2023 (**SEC'23**)

[9] **DriveFuzz: Discovering Autonomous Driving Bugs through Driving Quality-Guided Fuzzing**
Seulbae Kim, Major Liu, Junghwan Rhee, Yuseok Jeon, Yonghwi Kwon, and Chung Hwan Kim
ACM Conference on Computer and Communications Security 2022 (**CCS'22**)

[10] **ShadowAuth: Backward-Compatible Automatic CAN Authentication for Legacy ECUs**
Sungwoo Kim, Gisu Yeo, Taegyu Kim, Junghwan John Rhee, Yuseok Jeon, Antonio Bianchi, Dongyan Xu, and Dave (Jing) Tian
ACM ASIA Conference on Computer and Communications Security 2022 (**ASIACCS'22**)

[11] **SwarmFlawFinder: Discovering and Exploiting Logic Flaws of Swarm Algorithms**
Chijung Jung, Ali Ahad, Yuseok Jeon, and Yonghwi Kwon
IEEE Symposium on Security and Privacy 2022 (**S&P'22**)

[12] **Certified Malware in South Korea: A Localized Study of Breaches of Trust in Code-Signing PKI Ecosystem**
Bumjun Kwon, Sanghyun Hong, Yuseok Jeon, and Doowon Kim
International Conference on Information and Communications Security (**ICICS'21**)

[13] **FuZZan: Efficient Sanitizer Metadata Design for Fuzzing**
Yuseok Jeon, Wookhyun Han, Nathan Burow, and Mathias Payer
USENIX Annual Technical Conference 2020 (**ATC'20**)

[14] **PoLPer: Process-Aware Restriction of Over-Privileged Setuid Calls in Legacy Applications**
Yuseok Jeon, Junghwan Rhee, Chung Hwan Kim, Zhichun Li, Mathias Payer, Byoungyoung Lee, and Zhenyu Wu
ACM Conference on Data and Application Security and Privacy 2019 (**CODASPY'19**)

[15] **HexType: Efficient Detection of Type Confusion Errors for C++**
Yuseok Jeon, Priyam Biswas, Scott Carr, Byoungyoung Lee, and Mathias Payer
ACM Conference on Computer and Communications Security 2017 (**CCS'17**)

[16] **TypeSan: Practical Type Confusion Detection**
Istvan Haller, Yuseok Jeon, Hui Peng, Mathias Payer, Herbert Bos, Cristiano Giuffrida, and Erik van der Kouwe
ACM Conference on Computer and Communications Security 2016 (**CCS'16**)

[17] **A Distributed Monitoring Architecture for AMIs: Minimizing the Number of Monitoring Nodes and Enabling Collided Packet Recovery**
Incheol Shin, Junho Huh, Yuseok Jeon, and David M. Nicol
Smart Energy Grid Security Workshop 2013 in conjunction with CCS 2013 (**SEGS'13**)

[18] **LT-OLSR: Attack-Tolerant OLSR against Link Spoofing**
Yuseok Jeon, Tae-Hyung Kim, Yuna Kim, and Jong Kim
IEEE Conference on Local Computer Networks 2012 (**LCN'12**) (short paper)

Services

Organizing Committee

- ACM Computing Surveys, Associate Editor **(CSUR)**
- Information Security Conference, Publications Chair **(ISC'25)**
- IEEE/ACIS International Conference on Software Engineering, Management and Applications, Program Chair **(SERA'23)**

Program Committee

- USENIX Security Symposium **(SEC'26)**
- Network and Distributed System Security **(NDSS'26)**
- USENIX Security Symposium **(SEC'25)**

- IEEE Symposium on Security and Privacy **(S&P'25)**
- World Conference on Information Security Applications **(WISA'25)**
- USENIX Security Symposium **(SEC'24)**
- ACM Conference on Computer and Communications Security **(CCS'24)**
- Network and Distributed System Security **(NDSS'24)**
- World Conference on Information Security Applications **(WISA'24)**
- USENIX Security Symposium **(SEC'23)**
- Network and Distributed System Security **(NDSS'23)**
- World Conference on Information Security Applications **(WISA'23)**
- The Silicon Valley Cybersecurity Conference **(SVCC'23)**
- USENIX Security Symposium **(SEC'22)**
- European Symposium on Research in Computer Security **(ESORICS'22)**
- International Symposium on Research in Attacks, Intrusions and Defenses **(RAID'22)**
- ACM Conference on Data and Application Security and Privacy **(CODASPY'22)**
- USENIX Security Symposium **(SEC'21)**
- European Symposium on Research in Computer Security **(ESORICS'21)**
- International Symposium on Research in Attacks, Intrusions and Defenses **(RAID'21)**
- ACM Conference on Data and Application Security and Privacy **(CODASPY'21)**
- Man-At-The-Middle Attacks Workshop **(CheckMATE'21)**, co-located with the ACM CCS

Journal Reviewer

- IEEE Trans. on Dependable and Secure Computing
- ACM Trans. on Software Engineering and Methodology

Advising

CURRENT GRADUATED STUDENTS

1. **MINSEONG CHOI** — (PhD Student) 2023.2 - Current
2. **SUNGHYUN YANG** — (Master-PhD Combined) 2022.9 - Current; (Researcher) 2021.11 - 2022.8
3. **JIUN MIN** — (Master-PhD Combined) 2023.2 - Current; (Undergraduate Intern) 2020.12 - 2023.1
4. **DONGYEON YU** — (Master-PhD Combined) 2023.2 - Current; (Undergraduate Intern) 2020.12 - 2023.1
5. **SUMIN YANG** — (PhD Student) 2025.9 - Current; (Researcher) 2025.3 - 2025.8
6. **SEONG YUN JEONG** — (Master-PhD Combined) 2023.8 - Current; (Undergraduate Intern) 2021.12 - 2023.7
7. **JAEEUN EOM** — (Master-PhD Combined) 2024.9 - Current; (Undergraduate Intern) 2023.12 - 2024.8
8. **ZEEWUNG SHIN** — (Master-PhD Combined) 2024.9 - Current; (Researcher) 2024.4 - 2024.8
9. **YEONJI RYU** — (Master-PhD Combined) 2025.3 - Current; (Researcher) 2024.12 - 2025.2
10. **INGYU JANG** — (Master-PhD Combined) 2025.9 - Current; (Undergraduate Intern) 2021.5 - 2025.8
11. **SEOHYEON LEE** — (Master-PhD Combined) 2025.9 - Current; (Undergraduate Intern) 2022.7 - 2025.8

12. **CHANGHEON LEE** (Master-PhD Combined) 2025.9 - Current
(Researcher) 2024.3 - 2025.8

CURRENT UNDER-GRADUATED INTERN AND RESEARCHER

13. **MINKYO KIM** 2024.6 - Current
14. **INGEOL PARK** 2025.7 - Current

PAST UNDER-GRADUATED INTERN AND RESEARCHER

15. **INSUK SEO** 2021.5 - 2021.11
16. **GYOHUN HWANG** 2020.12 - 2021.12
17. **SEOHYEON LEE** 2021.5 - 2021.12
18. **LUONG DOAN** 2021.2 - 2022.1
19. **HYEONSEOK LEE** 2021.5 - 2022.1
20. **JUNESOO KANG** 2020.12 - 2022.3
21. **MINJIN KIM** 2021.12 - 2022.6
22. **YINAE PARK** 2021.12 - 2022.6
23. **ALMAS ABILKHANOV** 2020.12 - 2022.6
24. **MD.MAZBA UR RAHMAN** 2022.5 - 2022.7
25. **YECHAN PARK** 2022.6 - 2022.8
26. **SOYEON SIM** 2021.12 - 2022.8
27. **AZAMAT MYRZABEKOV** 2020.12 - 2022.9
28. **BAO TRUONG** 2021.2 - 2022.9
29. **JEONGHAN SON** 2022.6 - 2022.12
30. **NODIRKHUJA KHUJAEV** 2020.12 - 2023.2
31. **AHIN LEE** 2022.6 - 2023.2
32. **JOO HO SON** 2021.5 - 2023.2
33. **SEUNGMIN LEE** 2022.7 - 2023.6
34. **YONGMIN KWON** 2023.7 - 2023.11
35. **HYUNJU KIM** 2022.12 - 2023.5
36. **MINJOONG KIM** 2023.2 - 2023.11
37. **HYEONJU SHIN** 2023.6 - 2023.12
38. **CHANMIN PARK** 2021.12 - 2024.1
39. **YONGHUN NO** 2023.12 - 2024.2
40. **SEUNGBHIN PARK** 2024.1 - 2024.2
41. **JUNWHA HONG** 2020.12 - 2024.2
42. **YOUNGJIN LEE** 2024.2 - 2024.9
43. **YEWAN NA** 2023.7 - 2025.6
44. **JUYOUNG LEE** 2024.6 - 2025.2
45. **DONGUK KIM** 2024.8 - 2025.3
46. **WONIL JANG** 2024.2 - 2025.6

ALUMNI

47. **SANGHOON JUNG** (Master Student) 2022.9 - 2024.8
(Researcher) 2022.6 - 2022.8

48. **TAEYEONG HWANG** (Master Student) 2023.2 - 2025.8
(Undergraduate Intern) 2022.6 - 2023.1

Patents

[1] **Designing a Methodology for Detection of Type Confusion during Speculative Optimization.** Yuseok Jeon, Changheon Lee. KR patent 10-2024-0177227 (Applied 12/2024)

[2] **Method and Apparatus for Detecting Protocol Vulnerabilities based on Targets.** Yuseok Jeon, Jaeeun Eom. KR patent 10-2024-0189508 (Applied 12/2024)

[3] **Method and Apparatus for Mixed Tracker Removal based on Dynamic Analysis of Wed Scripts.** Yuseok Jeon, Zee Wung Shin. KR patent 10-2024-0189486 (Applied 12/2024)

[4] **Tracker Detection Devices, Tracker Detection Methods, and Computer Programs.** Yuseok Jeon. KR patent 10-2023-0182097 (Applied 12/2023)

[5] **Apparatus and Method for Detecting Malware Based Android.** Yuseok Jeon, Seongyun Jeong. KR patent 10-2023-0193639 (Applied 12/2023)

[6] **Memory Stability Determination Device, Method for Determining Stability of Memory Allocation Code by Detecting Atypical Memory Allocation Code, and Computer Program.** Yuseok Jeon. KR patent 10-2023-0174829 (Applied 12/2023)

[7] **Program Stability Determination Device, Method for Detecting Raw Pointers and Extracting Code Associated with the Raw Pointers, and Computer Program.** Yuseok Jeon. KR patent 10-2023-0174828 (Applied 12/2023)

[8] **Apparatus, Method and Computer Program for Testing Autonomous Driving Program.** Yuseok Jeon. KR patent 10-2023-0174827 (Applied 12/2023)

[9] **UAF Sequence-aware Efficient Fuzzing Approach.** Yuseok Jeon. KR patent 10-2023-0196124 (Applied 12/2023)

[10] **Memory Error Detection Apparatus and Method.** Yuseok Jeon. KR patent 10-2023-0189110 (Applied 12/2023)

[11] **Vulnerability Detection Device, Vulnerability Detection Method and Computer Program for Rust Language.** Yuseok Jeon. KR patent 10-2023-0023155 (Applied 2/2023)

[12] **Device and Method for Detecting Type Confusion using Memory Tagging, and Computer Program for Executing the Method.** Yuseok Jeon. KR patent 10-2022-0174184 (Applied 12/2022)

[13] **Security Check Code Validity Check Device, Security Check Code Validity Check Method and Computer Program.** Yuseok Jeon, Ingyu Jang. KR patent 10-2022-0174191 (Applied 12/2022)

[14] **Memory stability determination device, method for determining stability of memory allocation code by detecting atypical memory allocation code, and computer program.** Yuseok Jeon. US Patent 18/382,187 (Applied 10/2023), KR patent 10-2776614 (Granted 3/2024)

[15] **Security Setting Device, Method of Setting Oer-process Security Policy, and Computer Program Stored in Recording Medium for Execution of the Method.** Yuseok Jeon. US Patent 18/069,801 (Applied 12/2022), KR patent 10-2630816 (Granted 01/2024)

[16] **Blackbox Program Privilege Flow Analysis with Inferred Program Behavior Context.** Junghwan Rhee, Yuseok Jeon, Zhichun Li, Kangkook Jee, Zhenyu Wu, Guofei Jiang. US Patent 10,505,962 (Granted)

[17] **Fine-Grained Analysis and Prevention of Invalid Privilege Transitions.** Junghwan Rhee, Yuseok Jeon, Zhichun Li, Kangkook Jee, Zhenyu Wu, Guofei Jiang. US Patent 10,402,564 (Granted)

[18] **Automated blackbox inference of external origin user behavior.** Zhenyu Wu, Jungwhan Rhee, Yuseok Jeon, Zhichun Li, Kangkook Jee, Guofei Jiang. US Patent 10,572,661 (Granted)

Teaching

Wireless Security: COSE484, 3 credits, 55 students	**Fall 2025**
Data Structure: COSE213, 3 credits, 74 students	**Spring 2025**
Software Security: CSE614, 3 credits, 20 students	**Fall 2024**
System Programming: CSE251, 3 credits, 85 students	**Spring 2024**
Advanced Computer Security: CSE551, 3 credits, 17 students	**Fall 2023**
System Programming: CSE251, 3 credits, 85 students	**Spring 2023**

Computer Security: CSE467, 3 credits, 41 students	**Spring 2022**
Advanced Computer Security: CSE551, 3 credits, 8 students	**Fall 2021**
Software hacking and defense: UNI204, 1 credit, 10 students	**Winter 2021**
Computer Security: CSE467, 3 credits, 37 students	**Spring 2021**
Object Oriented Programming: CSE241, 3 credits, 65 students	**Fall 2020**

Invited Talks

Automotive and Unmanned Vehicle Security Seminar, KIISC	**Summer 2025**
Intensive Security Lecture Series, KIPS	**Spring 2025**
HD Hyundai Security Seminar, HD Hyundai	**Winter 2024**
Security Seminar for Information Security Officers of Local Governments, DIP	**Winter 2024**
Improving Information Security Skills Workshop Talk, UIPA	**Summer 2024**
National Security Research Institute Seminar, NSRI	**Fall 2023**
Maritime Cyber Security Expert Forum, KIISC	**Fall 2023**
Graduate School of Information Security Seminar, Korea University	**Fall 2023**
Deagu Cybersecurity Conference, DIP	**Fall 2023**
KCC Seminar, KIISE	**Summer 2023**
Software Disaster Research Center Seminar, STAAR	**Summer 2023**
National Security Research Institute Seminar, NSRI	**Spring 2023**
Sejong Cybersecurity Workshop, Sejong University	**Fall 2022**
Ulsan Science High School Talk	**Summer 2022**
CS seminar, Soonchunhyang University	**Spring 2022**
Graduate School of Information Security Seminar, Sungkyunkwan University	**Spring 2022**
CS Seminar, Inha University	**Fall 2021**
CS Seminar, Hannam University	**Fall 2021**
CS Seminar, Yonsei University	**Fall 2021**
CS Seminar, Soongsil University	**Spring 2021**
Graduate School of Information Security Seminar, KAIST	**Spring 2021**

Honors and Awards

NDSS Distinguished Paper Award, 2025
CERIAS Diamond Award, 2020
Bilsland Dissertation Fellowship, 2020
ACM CCS travel grant, 2016.
Expert certification (top grade), Samsung S/W certificate, 2015.
19th place, Samsung S/W Programming Contest Final, 2014.
19th place, ACM International Collegiate Programming Contest in Asia - Seoul, 2004.
Top prize, National Computer Competition, South Korea, 2001.
Bronze prize, Information Technology Competition, South Korea, 2001.
Bronze prize, Korea Computer Competition, South Korea, 2001.

Open Source Contribution

CMASan: Custom Memory Allocator-aware Address Sanitizer (GitHub repo)
Type++: Prohibiting Type Confusion with Inline Type Information (GitHub repo)
ERASAN: Efficient Rust Address Sanitizer (GitHub repo)
FuZZan: Efficient Sanitizer Metadata Design for Fuzzing (GitHub repo)
HexType: Efficient Detection of Type Confusion Errors for C++ (GitHub repo)
TypeSan: Practical Type Confusion Detection (GitHub repo)
Key-Manager (in Samsung Tizen OS): reducing probability of key leaking from device (GitHub repo)

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