Sungwoo Kim

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EDUCATION

Ph.D. in Computer Science, Purdue University, 2021 – Present
Advisors: Dave (Jing) Tian and Dongyan Xu
Objective: Adding reliability and assurance to operating systems through fuzz testing, program analysis, and symbolic execution.

B.S. in Engineering, Kwangwoon University 2014 – 2020
Advisor: Suwon Park
Major: Electronics and Communications Engineering

CONFERENCE PUBLICATIONS

[C2] Fuzz The Power: Dual-role State Guided Black-box Fuzzing for USB Power Delivery
Kyungtae Kim, **Sungwoo Kim**, Kevin Buttler, Antonio Bianchi, Rick Kennell, Dave (Jing) Tian
*32nd USENIX Security Symposium (Security'23), Anaheim, CA, August 2023 (**USENIX '23**)*
Anaheim, CA, August 2023 *Acceptance Rate: 29.2%*

[C1] 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
*Proceedings of the 2022 ACM Asia Conference on Computer and Communications Security (**ASIACCS '22**)*
Nagasaki, Japan, May 2022, *acceptance rate=18.4%*

CVES

macOS (XNU kernel) (4 in request)
- CVEs are in request. Descriptions: https://sung-woo.kim/b/syz-xnu/bugs.html

Linux Kernel NVMe Subsystem (1)
- CVE-2026-23244

Linux Kernel Bluetooth Subsystem (9)
- CVE-2024-50255, CVE-2024-38620, CVE-2024-36968, CVE-2024-36013, CVE-2024-36012, CVE-2024-36011, CVE-2023-40283, CVE-2023-28866, CVE-2022-45934

Commercial Drone (1)
- CVE-2021-34125

EXPERIENCE

Graduate Research Assistant 2021 – Present
PurSec Lab, Computer Science Department
- Advised by Prof. Dave Tian and Prof. Dongyan Xu.
- Researching on automated vulnerability discovery for operating systems.

Research Intern Aug. 2020 – Jul. 2021
PurSec Lab, Computer Science Department
- Mentored by Prof. Dave Tian and Prof. Dongyan Xu.
- Researched on improving the reliability for in-vehicle network.

Software Engineer Jun. 2016 – Mar. 2018
Republic of Korea Cyber Command
- Developed military software during mandatory military service.

MISC.

- Artifact Evaluation Committee: USENIX'24, USENIX'26
- Developed & maintainining https://cspapers.org (200+ GitHub stars)