Sungwoo Kim

Ph. D. Student in Computer Science researching system security
kim3583@purdue.edu | https://sung-woo.kim/ | https://cspapers.org/

Research Interests

Kerenl Security, Fuzz testing, System Security, Program Analysis, Cyber-Physical System.

Education

Purdue University, Dept. of Computer Science — West Lafayette, IN, USA
Ph. D. in Computer Science — 2021–Now
Advisors: Dave (Jing) Tian and Dongyan Xu

Kwangwoon University, Dept. of Electronics and Communications Eng. — Seoul, Republic of Korea
B.S. in Electronics and Communications Engineering — 2014–2020
Advisor: Suwon Park

CVEs

Linux Kernel (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

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%*

Community Service

Artifact Evaluation Committee (AEC)
- USENIX Security Symposium (USENIX) 2024

Developed & maintains https://cspapers.org
- Serve a search engine for top-tier conferences in computer science.
- Handle 2.8k daily requests with 100ms response time, indexing 450k documents.
- Attain 123 GitHub stars and one citation as of 04/15/2025.

Patents

[PT2] Honeynet System for Internet Of Things using Packet Virtualization
[PT1] Origin Tracking Method and System using DNS Server for Infected Systems

Skills

Programming Languages: C; Golang; Haskell; Erlang
Web Application Framework: NextJS (Typescript); NestJS (Typescript); Spring (Kotlin and Java); .NET core (C#)
User Interface Library / Framework: React; Vue; SCSS
Software Tools: IDA Pro; Ghidra; OllyDBG