Sungwoo Kim

Ph. D. Student in Computer Science at Purdue University
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https://sung-woo.kim/

RESEARCH INTERESTS	System Security, Program Analysis, Cyber-Physical System.	
EDUCATION	**Purdue University**, Dept. of Computer Science *Ph. D. in Computer Science* Advisors: Dave (Jing) Tian and Dongyan Xu	West Lafayette, IN, USA 2021–Now
	Kwangwoon University, Dept. of Electronics and Communications Eng. *B.S. in Electronics and Communications Engineering* Advisor: Suwon Park	Seoul, Republic of Korea 2014–2020

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%*

PROFESSIONAL SERVICE

Artifact Evaluation Committee (AEC)

- USENIX Security Symposium (USENIX) 2024

WORK EXPERIENCE	**Purdue University**, Dept. of Computer Science *Graduate Research Assistant* - Researching iOS kernel security - Researching Bluetooth security - Researching in-vehicle network security	West Lafayette, IN, USA 2021–Now
	Inedit Corp. *Software Engineer* - Maintained a mobile application "brandazine" using Django REST Framework, Vue, and Cordova	Seoul, Republic of Korea Apr.–Jul. 2021
	Purdue University, Dept. of Computer Science *Research Intern* - Internship advisor: Dave (Jing) Tian - Researched in-vehicle network security	West Lafayette, IN, USA Aug. 2020– Jul. 2021
	F1Security *Software Engineer* - Developed a low-overhead Honeypot system for embedded devices - Developed a signature-based anti-virus system for web applications	Seoul, Republic of Korea May 2018–Jan. 2020
	Republic of Korea Cyber Operations Command *Sergeant; Software Engineer*	Republic of Korea Jun. 2016–Mar. 2018

- Developed military software

Korea Information Technology Research Institute Seoul, Republic of Korea
Trainee in "Best of the Best (BOB)" Program Jun. 2014–Jan. 2015
- Trained security techniques: binary analysis, SQL injection, buffer overflow, etc.
- Reported vulnerabilities discovered from a commercial car rental system

TEACHING
EXPERIENCE

Korea Maritime & Ocean University Busan, Republic of Korea
Guest Lecturer May 10. 2024
- Lectured on CAN security

Hongik University High School Seoul, Republic of Korea
Guest Lecturer Jul. 07. 2023
- Lectured on software security

Hongik University High School Seoul, Republic of Korea
Instructor Mar.–Jul. 2021
- Lectured on a quadruped robot dog

PATENTS

[PT2] Honeynet System for Internet Of Things using Packet Virtualization
Korean Patent No. 102062718

[PT1] Origin Tracking Method and System using DNS Server for Infected Systems
Korean Patent No. 101961451

CVE

Linux Kernel (8)
- 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

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