

Sungwoo Kim

Ph. D. Student in Computer Science at Purdue University

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|-------------------------|---|---|
| RESEARCH INTERESTS | System Security, Program Analysis, Cyber-Physical System. | |
| EDUCATION | Purdue University , Dept. of Computer Science <i>Ph. D. in Computer Science</i> Advisors: Dave (Jing) Tian and Dongyan Xu | West Lafayette, IN, USA 2021–Now |
| | Kwangwoon University , Dept. of Electronics and Communications Eng. <i>B.S. in Electronics and Communications Engineering</i> Advisor: Suwon Park | Seoul, Republic of Korea 2014–2020 |
| CONFERENCE PUBLICATIONS | <p>[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 <i>32nd USENIX Security Symposium (Security'23), Anaheim, CA, August 2023 (USENIX '23)</i> Anaheim, CA, August 2023 <i>Acceptance Rate: 29.2%</i></p> <p>[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 <i>Proceedings of the 2022 ACM Asia Conference on Computer and Communications Security (ASIACCS '22)</i> Nagasaki, Japan, May 2022, <i>acceptance rate=18.4%</i></p> | |
| PROFESSIONAL SERVICE | Artifact Evaluation Committee (AEC) <ul style="list-style-type: none">• USENIX Security Symposium (USENIX) 2024 | |
| WORK EXPERIENCE | Purdue University , Dept. of Computer Science <i>Graduate Research Assistant</i> <ul style="list-style-type: none">- Researching iOS kernel security- Researching Bluetooth security- Researching in-vehicle network security | West Lafayette, IN, USA 2021–Now |
| | Inedit Corp. <i>Software Engineer</i> <ul style="list-style-type: none">- 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 <i>Research Intern</i> <ul style="list-style-type: none">- Internship advisor: Dave (Jing) Tian- Researched in-vehicle network security | West Lafayette, IN, USA Aug. 2020– Jul. 2021 |
| | F1Security <i>Software Engineer</i> <ul style="list-style-type: none">- 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 <i>Sergeant; Software Engineer</i> | Republic of Korea Jun. 2016–Mar. 2018 |
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- 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 (6)

- 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