

# Sungwoo Kim

Ph. D. Student in Computer Science at Purdue University

[kim3583@purdue.edu](mailto:kim3583@purdue.edu)

<https://sung-woo.kim/>

<https://cspapers.org/>

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RESEARCH INTERESTS      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

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

	<b>Republic of Korea Cyber Operations Command</b> <i>Sergeant; Software Engineer</i> - Developed military software	Republic of Korea Jun. 2016–Mar. 2018
	<b>Korea Information Technology Research Institute</b> <i>Trainee in “Best of the Best (BOB)” Program</i> - Trained security techniques: binary analysis, SQL injection, buffer overflow, etc. - Reported vulnerabilities discovered from a commercial car rental system	Seoul, Republic of Korea Jun. 2014–Jan. 2015
TEACHING EXPERIENCE	<b>Korea Maritime &amp; Ocean University</b> <i>Guest Lecturer</i> - Lectured on CAN security	Busan, Republic of Korea May 10. 2024
	<b>Hongik University High School</b> <i>Guest Lecturer</i> - Lectured on software security	Seoul, Republic of Korea Jul. 07. 2023
	<b>Hongik University High School</b> <i>Instructor</i> - Lectured on a quadruped robot dog	Seoul, Republic of Korea Mar.–Jul. 2021
PATENTS	<b>[PT2]</b> Honeynet System for Internet Of Things using Packet Virtualization Korean Patent No. 102062718  <b>[PT1]</b> Origin Tracking Method and System using DNS Server for Infected Systems Korean Patent No. 101961451	
CVE	<b>Linux Kernel (9)</b> - 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 <b>Commercial Drone (1)</b> - CVE-2021-34125	
SKILLS	<b>Programming Languages:</b> C; Golang; Haskell; Erlang <b>Web Application Framework:</b> NextJS (Typescript); NestJS (Typescript); Spring (Kotlin and Java); .NET core (C#) <b>User Interface Library / Framework:</b> React; Vue; SCSS <b>Software Tools:</b> IDA Pro; Ghidra; OllyDBG	