# Dongkwan Kim

Postdoctoral Fellow, SSLab School of Cybersecurity and Privacy Georgia Institute of Technology 

## WORK EXPERIENCE

<ul> <li>Georgia Tech, Postdoctoral Fellow, Atlanta, GA</li> <li>DARPA AIxCC Finalist: Designed and implemented LLM-based autonomous fuzzing</li> <li>Leveraging LangGraph, LangChain, LiteLLM, and Phoenix.</li> <li>Currently evaluating AI's offensive potential in real-world cybersecurity scenarios.</li> </ul>	Feb 2025 – Present g and exploit agents.
Manager: Prof. Taesoo Kim	
<ul> <li>Samsung Security Center, Samsung SDS, Senior Engineer, South Korea</li> <li>Drove Red Team operations across AI systems, IoT devices, Android apps, and kerne</li> <li>Secured 30+ consumer and enterprise products, protecting 1B+ users.</li> <li>Delivered executive-level reports and gave organization-wide presentations to 50</li> <li>Shared insights on AI system security at 6 industry and academic venues.</li> <li>Securing prompt injection chains against remote code execution, impersonation,</li> </ul>	00+ security engineers.
<ul> <li>KAIST, Postdoctoral Researcher, South Korea</li> <li>Conducted advanced research on: <ul> <li>Smartphone baseband authentication bypass (USENIX Security '23)</li> <li>Acoustic signal injection attacks against drone sensors and recovery techniques (Normal Signal injection on drone sensory communication channels (NDSS'23)</li> <li>Manager: Prof. Yongdae Kim</li> </ul> </li> </ul>	Mar 2022 – Jul 2022 NDSS'23)
<b>Pinion Industries</b> , Research Intern, South Korea Analyzed automotive CAN messages and exploited in-vehicle components, achieving	Dec 2013 – Feb 2014 RCE and wiretapping.
KAIST CERT, Student Senior, South Korea Led the student team (Sep 2011 – Aug 2012) in campus-wide security assessment und Investigated security incidents, including probing a serious life-threatening email attached	
EDUCATION	
Korea Advanced Institute of Science and Technology (KAIST), South K	lorea
<ul> <li>Ph.D. in School of Electrical Engineering</li> <li>Thesis Title: Improving Large-Scale Vulnerability Analysis of IoT Devices with Code Similarity</li> <li>Advisor: Prof. Yongdae Kim</li> </ul>	Mar 2016 – Feb 2022 a Heuristics and Binary
<ul> <li>M.S. in School of Electrical Engineering</li> <li>Thesis Title: Dissecting VoLTE: Exploiting Free Data Channels and Security Pro</li> <li>Advisor: Prof. Yongdae Kim</li> </ul>	
B.S. in School of Computing	Feb 2010 – Feb 2014
<ul> <li>EURECOM, France</li> <li>Visiting Scholar in Software and System Security</li> <li>Learned embedded device analysis techniques, particularly for debugging interfac</li> <li>Advisor: Prof. Aurélien Francillon</li> </ul>	Jun 2014 – Jul 2014 es

# Honors & Awards

Hacking Contests ( <i>i.e.</i> , Capture-the-flag, CTF)	
Finalist, DEFCON 27 CTF	(Team KaisHack GoN) Aug 2019
Finalist, DEFCON 26 CTF	(Team KaisHack+PLUS+GoN) Aug 2018
1st place ( $$20,000$ ), HDCON CTF	(Team maxlen) Nov 2017
1st place (\$30,000), Whitehat Contest	(Team Old GoatskiN) Nov 2017
3rd place (\$5,000), Codegate CTF	(Team Old GoatskiN) Apr 2017
Finalist, DEFCON 24 CTF	(Team KaisHack GoN) Aug 2016
1st place (\$20,000), Whitehat Contest	(Team SysSec) Nov 2014
Finalist, DEFCON 22 CTF	(Team KAIST GoN) Aug 2014
Silver prize (\$2,000), HDCON CTF	(Team GoN) Dec $2013$
1st place (\$20,000), Whitehat Contest	(Team KAIST GoN) Oct 2013
Finalist, DEFCON 20 CTF	(Team KAIST GoN) Jul 2012
Silver prize (\$2,000), HDCON CTF	(Team KAIST GoN) Jul 2012
3rd place ( $$5,000$ ), Codegate CTF 2012	(Team KAIST GoN) Apr 2012
1st place (\$10,000), ISEC CTF	(Team GoN) Sep 2011
1st place (\$1,000), PADOCON CTF	(Team GoN) Jan 2011
Academic Awards	
Best Paper Award, CISC-W	Nov 2020
· Title: Standard-based User Identifier Mapping Attack Prev	vention Method for LTE Network
Best Presentation Award, A3 Security Workshop	Feb 2016
· Title: Breaking and Fixing VoLTE: Exploiting Hidden Dat	a Channels and Mis-implementations
Best Paper Award, WISA	Aug 2015
$\cdot$ Title: BurnFit: Analyzing and Exploiting Wearable Device	s
Reported Security Vulnerabilities	
CVE-2015-6614, Android telephony privilege escalation, Googl	e Oct 2015
Government-Issued Certificates	
Engineer Information Security, South Korea	Jun 2016
Engineer Information Processing, South Korea	May 2013
Scholarships	
National Scholarship (Science and Engineering), Korea Studen	t Aid Foundation Feb 2010 – Feb 2020

## PATENTS

		ternational Registrations US 10111120	Oct 2018
		Method and Apparatus for Checking Problem in Mobile Communication Network	
	Do	omestic Registrations, South Korea	
	[1]	<b>KR 10-2514809</b> VIDEO IDENTIFICATION METHOD IN LTE NETWORKS AND THE SYSTEM THEREOF	Mar 2023
	[2]	KR 10-2418212	Jul 2022
		ARCHITECTURE-INDEPENDENT SIMILARITY MEASURING METHOD FOR PROGRAM FU	UNCTION
	[3]	KR 10-2415494	Jun 2022
		Emulation based security analysis method for embedded devices	
	[4]	KR 10-2333866	Nov 2021
		Method and Apparatus for Checking Problem in Mobile Communication Network	
	[5]	KR 10-1972825	Apr 2019
		Method and apparatus for automatically analyzing vulnerable point of embedded appliance by usi analysis technology, and computer program for executing the method	ing hybrid
	[6]	KR 10-1868836	Jun 2018
		A method to attack commercial drones using the resonance effect of gyroscopes by sound waves	
	Ap	oplications	
	[1]	KR 10-2022-0132964	Oct 2022
		ANTI-DRONE SYSTEM THROUGH COMMUNICATION DISTORTION BETWEEN SENSOR A	AND CON-
		TROL UNIT AND ITS OPERATION METHOD	
	[2]	KR 10-2021-0168382	Nov 2021
		Method and System for Automatically Analyzing Bugs in Cellular Baseband Software using Co	mparative
	[0]	Analysis based on Cellular Specifications	0
	[3]	KR 10-2021-0136352	Oct 2021
		METHOD FOR PREVENTING MAPPING OF USER IDENTIFIERS IN MOBILE COMMUN SYSTEM AND THE SYSTEM THEREOF	ICATION
	[4]	KR 10-2021-0040795	${\rm Mar}~2021$
		ANALYSIS SYSTEM FOR DETECTION OF SIP IN VOLTE AND THE METHOD THEREOF	
	[5]	KR 10-2020-0177062	Dec 2020
	[0]	Analysis method for detection of SIP implementation vulnerability in VoLTE	0 / 2020
	[6]	KR 10-2020-0133926	Oct 2020
	[7]	Method to prevent mapping of user identifiers in mobile communication system <b>KR 10-2020-0133925</b>	Oct 2020
	[•]	APPARATUS AND METHOD FOR VIDEO TITLE IDENTIFICATION OF MOBILE COMMUN	
		NETWORK USING ENCRYPTED TRAFFIC MONITORING	101111011
	[8]	KR 10-2019-0005131	Jan 2019
		Large-scale honeypot system IoT botnet analysis	
	[9]	KR 10-2018-0036403	Mar 2018
		Dynamic analysis method for malicious embedded firmware detection	
[	[10]	KR 10-2018-0036055	${\rm Mar}~2018$
	_	Emulation based security analysis method for embedded devices	
[	[11]	KR 10-2018-0037291	Mar 2018
r	[10]	Binary-Level Virtual Function Call Protection Method by Saving Type Information	M coto
l	[12]	KR 10-2018-0034616 ARCHITECTURE-INDEPENDENT SIMILARITY MEASURING METHOD FOR PROGRAM FU	Mar 2018
		- ΑΠΟΠΤΙΕΟΙ ΟΠΕ-ΠΝΡΕΓΕΝΡΕΝΙ δΙΜΠΑΠΤΙ ΜΕΑδΟΠΙΝΟ ΜΕΙΗΟΡΙΟΚ ΡΚΟΘΚΑΜΙΟ	UNUTION

# PUBLICATIONS (INTERNATIONAL)

(*:	: co-first authors)	
[1]	BaseComp: A Comparative Analysis for Integrity Protection in Cellular Baseband ware	Soft-
	Eunsoo Kim <sup>*</sup> , Min Woo Baek <sup>*</sup> , CheolJun Park, <b>Dongkwan Kim</b> , Yongdae Kim, and Insu Yun	
	Proceedings of the 32nd USENIX Security Symposium (Security'23)	~ 2022
[0]		g 2023
[2]	Un-Rocking Drones: Foundations of Acoustic Injection Attacks and Recovery The	ereof
	Jinseob Jung, <b>Dongkwan Kim</b> , Joonha Jang, Juhwan Noh, Changhun Song, and Yongdae Kim Proceedings of the 2023 Annual Network and Distributed System Security Symposium (NDSS'23)	
		ar 2023
[0]		
[3]	Paralyzing Drones via EMI Signal Injection on Sensory Communication Channels Junha Jang, ManGi Cho, Jaehoon Kim, Dongkwan Kim, and Yongdae Kim	5
	Proceedings of the 2023 Annual Network and Distributed System Security Symposium (NDSS'23)	
		ar 2023
[4]	Watching the Watchers: Practical Video Identification Attack in LTE Networks	
[-]	Sangwook Bae, Mincheol Son, <b>Dongkwan Kim</b> , CheolJun Park, Jiho Lee, Sooel Son, and Yongdae I	Kim
	Proceedings of the 31st USENIX Security Symposium (Security'22)	
	Acceptance rate: 18.10% (256 of 1,414) Au	g 2022
[5]	Revisiting Binary Code Similarity Analysis using Interpretable Feature Engineering	g and
	Lessons Learned	
	<b>Dongkwan Kim</b> , Eunsoo Kim, Sang Kil Cha, Sooel Son, and Yongdae Kim	
	IEEE Transactions on Software Engineering (TSE'22) Ju	ıl 2022
[6]	Improving Large-Scale Vulnerability Analysis of IoT Devices with Heuristics and B Code Similarity	inary
	Dongkwan Kim	
	Ph.D. Thesis, KAIST Daejeon, South Korea, Fe	b 2022
[7]	Enabling the Large-Scale Emulation of Internet of Things Firmware With Heu Workarounds	ıristic
	<b>Dongkwan Kim</b> , Eunsoo Kim, Mingeun Kim, Yeongjin Jang, and Yongdae Kim	
	IEEE Security & Privacy Ma	y 2021
[8]	BaseSpec: Comparative Analysis of Baseband Software and Cellular Specification	ns for
	L3 Protocols	
	<b>Dongkwan Kim</b> <sup>*</sup> , Eunsoo Kim <sup>*</sup> , CheolJun Park, Insu Yun, and Yongdae Kim	
	Proceedings of the 2021 Annual Network and Distributed System Security Symposium (NDSS'21)	1 0001
	Acceptance rate: 15.18% (87 of 573) Virtual, Fe	b 2021
[9]	FirmAE: Towards Large-Scale Emulation of IoT Firmware for Dynamic Analysis	
	Mingeun Kim, <b>Dongkwan Kim</b> , Eunsoo Kim, Suryeon Kim, Yeongjin Jang, and Yongdae Kim	
	Proceedings of the 2020 Annual Computer Security Applications Conference (ACSAC'20) Acceptance rate: 23.18% (70 of 302) Virtual, De	ac 2020
	Vitual, De	.0 2020

[10] Who Spent My EOS? On the (In)Security of Resource Management of EOS.IO

Sangsup Lee, Daejun Kim, Dongkwan Kim, Sooel Son, and Yongdae Kim Proceedings of the 13th USENIX Workshop on Offensive Technologies (WOOT'19) Santa Clara, CA, Aug 2019 [11] Peeking over the Cellular Walled Gardens - A Method for Closed Network Diagnosis Byeongdo Hong, Shinjo Park, Hongil Kim, Dongkwan Kim, Hyunwook Hong, Hyunwoo Choi, Jean-Pierre Seifert, Sung-Ju Lee, and Yongdae Kim IEEE Transactions on Mobile Computing (TMC'18) Feb 2018 [12] When Cellular Networks Met IPv6: Security Problems of Middleboxes in IPv6 Cellular Networks Hyunwook Hong, Hyunwoo Choi, Dongkwan Kim, Hongil Kim, Byeongdo Hong, Jiseong Noh, and Yongdae Kim Proceedings of the 2nd IEEE European Symposium on Security and Privacy (EuroS&P'17) Acceptance rate: 19.58% (38 of 194) Paris, France, Apr 2017 [13] Pay As You Want: Bypassing Charging System in Operational Cellular Networks Hyunwook Hong, Hongil Kim, Byeongdo Hong, Dongkwan Kim, Hyunwoo Choi, Eunkyu Lee, and Yongdae Kim Proceedings of the 17th International Workshop on Information Security Applications (WISA'16) Jeju, South Korea, Aug 2016 [14] Dissecting VoLTE: Exploiting Free Data Channels and Security Problems Dongkwan Kim M.S. Thesis, KAIST Daejeon, South Korea, Feb 2016 [15] Breaking and Fixing VoLTE: Exploiting Hidden Data Channels and Mis-implementations Dongkwan Kim\*, Hongil Kim\*, Minhee Kwon, Hyungseok Han, Yeongjin Jang, Dongsu Han, Taesoo Kim, and Yongdae Kim Proceedings of the 22nd ACM Conference on Computer and Communications Security (CCS'15) Acceptance rate: 19.81% (128 of 646) Denver, CO, Oct 2015 [16] BurnFit: Analyzing and Exploiting Wearable Devices Dongkwan Kim, Suwan Park, Kibum Choi, and Yongdae Kim Proceedings of the 16th International Workshop on Information Security Applications (WISA'15) Best Paper Award Jeju, South Korea, Aug 2015 [17] Rocking Drones with Intentional Sound Noise on Gyroscopic Sensors Yunmok Son, Hocheol Shin, Dongkwan Kim, Youngseok Park, Juhwan Noh, Kibum Choi, Jungwoo Choi, and Yongdae Kim Proceedings of the 24th USENIX Security Symposium (Security'15) Acceptance rate: 15.73% (67 of 426) Austin, TX, Aug 2015 [18] Analyzing Security of Korean USIM-based PKI Certificate Service Shinjo Park, Suwan Park, Insu Yun, Dongkwan Kim, and Yongdae Kim Proceedings of the 15th International Workshop on Information Security Applications (WISA'14) Jeju, South Korea, Aug 2014 [19] High-speed Automatic Segmentation of Intravascular Stent Struts in Optical Coherence **Tomography Images** 

Myounghee Han, **Dongkwan Kim**, Wang-Yuhl Oh, and Sukyoung Ryu

# PUBLICATIONS (DOMESTIC, SOUTH KOREA)

[20]	] Video Service Identification Attack in LTE by Monitoring Encrypted Traffic Mincheol Son, Sangwook Bae, <u>Dongkwan Kim</u> , Jiho Lee, CheolJun Park, BeomSeok Oh, Sooel So Yongdae Kim	
	Proceedings of Symposium of the Korean Institute of Communications and Informa (KCIS'21)	tion Sciences Virtual, Jun 2021
[01]		
[21]	CheolJun Park, Sangwook Bae, Jiho Lee, Mincheol Son, <b>Dongkwan Kim</b> , Sooel Se Conference on Information Security and Cryptography Winter (CISC-W'20)	on, and Yongdae Kim
	Best Paper Award	South Korea, Nov 2020
[22]	VoLTEFuzz: Framework for Comprehensive Analysis of SIP in VoL	ГЕ
	Seokbin Yun, Sangwook Bae, Mincheol Son, <b>Dongkwan Kim</b> , Jiho Lee, CheolJun and Yongdae Kim	Park, Yeongbin Hwang,
	Conference on Information Security and Cryptography Winter (CISC-W'20)	South Korea, Nov 2020
[23]	Firm-Pot: Large-scale Firmware Honey-Pot for Malware Analysis Minguen Kim, Eunsoo Kim, <u>Dongkwan Kim</u> , and Yongdae Kim Conference on Information Security and Cryptography Winter (CISC-W'18)	South Korea, Dec 2018
[24]	TVT: Typed Virtual Table for Mitigating VTable Hijacking	
	Jeongoh Kyea, Eunsoo Kim, <b>Dongkwan Kim</b> , and Yongdae Kim	
	Conference on Information Security and Cryptography Winter (CISC-W'17)	South Korea, Dec 2017
[25]	Design and Implementation of GPS Spoofer Software Juhwan Noh, Dongkwan Kim, and Yongdae Kim	
	Conference on Information Security and Cryptography Summer (CISC-S'15)	South Korea, Jun 2015
[26]		,
[20]	Shinjo Park, Suwan Park, Insu Yun, <b>Dongkwan Kim</b> , and Yongdae Kim	
	Conference on Information Security and Cryptography Summer (CISC-S'14)	South Korea, Jun 2014
[27]	Security Analysis of Femtocells in Korea	
	Eunsoo Kim, <b>Dongkwan Kim</b> , Youjin Lee, Shinjo Park, and Yongdae Kim Conference on Information Security and Cryptography Summer (CISC-S'14)	South Korea, Jun 2014

## INVITED TALKS

# AI Security Primer: Red Team Perspectives on Navigating New Threats and Safeguarding AI Frontier

Special Lecture for Hyundai Motors Group Security Center	Seoul, South Korea, Jan 2025
3rd Workshop of IT Platform Security Research Group by Korea Institute of	f Information Security & Cryp-
tology (KIISC)	Seoul, South Korea, Nov 2024

Special Lecture for SungSungshin Women's University	Seoul, South Korea, Oct 2024
Special Lecture for SK Telecom Security Team	Seoul, South Korea, Jul 2024
SIS 2024: MERGE conference by S2W	Seoul, South Korea, Jul 2024
.HACK Conference by Theori	Seoul, South Korea, May 2024

#### Scaling up Vulnerability Analysis of IoT Devices with Heuristics and Binary Code Similarity Technology Exchange Meeting between Samsung Mobile Security Team and Hyundai Motor Company Vehicle Cyber Security Team Seoul, South Korea, Jul 2024 Special Lecture for Kyung Hee University Yongin, South Korea, Aug 2024 Colloquium at School of Cybersecurity, Korea University Seoul, South Korea, Oct 2023 Peeking over Industry's Patch Gap: Case Study of Samsung SmartTV's Web Browser KAIST-Samsung SDS Tech Seminar Daejeon, South Korea, Mar 2023 BaseSpec: Comparative Analysis of Baseband Software and Cellular Specifications for L3 **Protocols** Annual Network and Distributed System Security Symposium Virtual, Feb 2021 KAIST-CISPA Workshop Seoul, South Korea, Aug 2019 Breaking and Fixing VoLTE: Exploiting Hidden Data Channels and Mis-implementations

### A.k.a. Dissecting VoLTE: Exploiting Free Data Channels and Security Problems

Tikka. Disseeting volitili Exploiting free Data channels and security i toblens		
GSMA RCS/VoLTE Security Regulatory workshop	Toronto, Canada, Sep 2016	
A3 Foresight Program Annual Workshop	Okinawa, Japan, Feb 2016	
Chaos Communication Congress (CCC) Conference (32C3)	Hamburg, Germany, Dec 2015	
National Security Research Institute	Daejeon, South Korea, Nov 2015	
Power of Community (PoC) Conference	Seoul, South Korea, Nov 2015	
ACM Conference on Computer and Communications Security (CCS)	Denver, CO, Oct 2015	
Seminar at the Georgia Institute of Technology	Atlanta, GA, Oct 2015	
BurnFit: Analyzing and Exploiting Wearable Devices		
16th WISA	Jeju, South Korea, Aug 2015	
International CTF Challenge Solving		
NetSec-KR	Seoul, South Korea, Apr 2013	

### **PROFESSIONAL ACTIVITIES**

Secondary Reviewer (Security)		
IEEE Symposium on Security and Privacy (Oakland)	2021	
USENIX Security Symposium (Security)	2019 - 2021	
Network and Distributed System Security Symposium (NDSS)	$2017 – 2018,\ 2020 – 2021$	
ACM Conference on Computer and Communications Security (CCS)	$2017,\ 2019 – 2021$	
IEEE European Symposium on Security and Privacy (EuroS&P)	2016,2018,2020	
ACM ASIA Conference on Computer and Communications Security (ASIACCS)	$2016 – 2017,\ 2019 – 2020$	
The WEB Conference (WWW)	2018, 2020	
International Symposium on Research in Attacks, Intrusions and Defenses (RAID)	2017	
IEEE Symposium on Privacy-Aware Computing (PAC)	2017	
Secondary Reviewer (System)		
ACM Symposium on Operating Systems Principles (SOSP)	2019	
Symposium on Operating Systems Design and Implementation (OSDI)	2016	
External Security Consultant		
KAIST Computer Emergency Response Team	Sep 2010 – Feb 2022	

## PARTICIPATED PROJECTS

(*:	participated as a project leader)		
In	dustrial Projects		
	An Industry-academia Task with Samsung Electronics Device Solu-	Jun 2020 –	Aug 2020
[*]	tions Business	0 an 2020	1148 -0-0
	· Samsung Electronics		
[2]	*Organizing 2018 Samsung Capture-the-flag (SCTF)	Apr 2018 –	Oct 2018
	Samsung Electronics		
[3]	*Organizing 2017 Samsung Capture-the-flag (SCTF)	Dec 2016 –	Dec 2017
	· Samsung Electronics		
[4]	A Study on the Security Vulnerability Analysis and Response	Aug 2016 -	- Jul 2017
	Method of LTE Networks		
	· SK Telecom		
[5]	A Security Vulnerability Analysis of Smartcar Core Modules	Jul 2016 –	Jun $2017$
	· Hyundai NGV		
[6]	A Study on the Security Analysis and Response Method of LTE	Aug 2015 –	Apr $2016$
	Networks		
	· SK Telecom		
[7]	A Security Analysis of Samsung SmartTV 2014	Feb 2014 –	Dec 2015
	· Samsung Electronics		
Int	ternational Projects		
	*Cyber Physical Analysis of System Software Survivability by Stim-	Jun 2020 –	Feb 2022
	ulating Sensors on Drones		
	· Air Force Office of Scientific Research (AFOSR), Air Force Research Laboratory	(AFRL)	
0			
	overnmental Projects	Mara 2020	D 2020
	*A Study on the Android-based Security Analysis Technology	May 2020 –	Dec 2020
[1]	*A Study on the Android-based Security Analysis Technology · National Security Research (NSR)	Ū	
[1]	<ul> <li>*A Study on the Android-based Security Analysis Technology</li> <li>National Security Research (NSR)</li> <li>A Study on the Security of Random Number Generator and Embed-</li> </ul>	May 2020 – Jul 2017 –	
[1]	<ul> <li>*A Study on the Android-based Security Analysis Technology <ul> <li>National Security Research (NSR)</li> </ul> </li> <li>A Study on the Security of Random Number Generator and Embedded Devices</li> </ul>	Jul 2017 –	
[1] [2]	<ul> <li>*A Study on the Android-based Security Analysis Technology <ul> <li>National Security Research (NSR)</li> </ul> </li> <li>A Study on the Security of Random Number Generator and Embedded Devices <ul> <li>Institute for Information &amp; Communications Technology Planning &amp; Evaluation</li> </ul> </li> </ul>	Jul 2017 – (IITP)	Jun 2019
[1] [2]	<ul> <li>*A Study on the Android-based Security Analysis Technology <ul> <li>National Security Research (NSR)</li> </ul> </li> <li>A Study on the Security of Random Number Generator and Embedded Devices <ul> <li>Institute for Information &amp; Communications Technology Planning &amp; Evaluation</li> </ul> </li> <li>*A Study on the Firmware Emulation Technology for Linux-based</li> </ul>	Jul 2017 –	Jun 2019
[1] [2]	<ul> <li>*A Study on the Android-based Security Analysis Technology <ul> <li>National Security Research (NSR)</li> </ul> </li> <li>A Study on the Security of Random Number Generator and Embedded Devices <ul> <li>Institute for Information &amp; Communications Technology Planning &amp; Evaluation</li> </ul> </li> <li>*A Study on the Firmware Emulation Technology for Linux-based Routers</li> </ul>	Jul 2017 – (IITP)	Jun 2019
[1] [2] [3]	<ul> <li>*A Study on the Android-based Security Analysis Technology <ul> <li>National Security Research (NSR)</li> </ul> </li> <li>A Study on the Security of Random Number Generator and Embedded Devices <ul> <li>Institute for Information &amp; Communications Technology Planning &amp; Evaluation</li> </ul> </li> <li>*A Study on the Firmware Emulation Technology for Linux-based Routers <ul> <li>NSR</li> </ul> </li> </ul>	Jul 2017 – (IITP) May 2017 –	Jun 2019 Oct 2017
[1] [2] [3]	<ul> <li>*A Study on the Android-based Security Analysis Technology <ul> <li>National Security Research (NSR)</li> </ul> </li> <li>A Study on the Security of Random Number Generator and Embedded Devices <ul> <li>Institute for Information &amp; Communications Technology Planning &amp; Evaluation</li> </ul> </li> <li>*A Study on the Firmware Emulation Technology for Linux-based Routers <ul> <li>NSR</li> </ul> </li> <li>A Development of Automated Reverse Engineering and Vulnerability</li> </ul>	Jul 2017 – (IITP)	Jun 2019 Oct 2017
[1] [2] [3]	<ul> <li>*A Study on the Android-based Security Analysis Technology <ul> <li>National Security Research (NSR)</li> </ul> </li> <li>A Study on the Security of Random Number Generator and Embedded Devices <ul> <li>Institute for Information &amp; Communications Technology Planning &amp; Evaluation</li> </ul> </li> <li>*A Study on the Firmware Emulation Technology for Linux-based Routers <ul> <li>NSR</li> </ul> </li> </ul>	Jul 2017 – (IITP) May 2017 –	Jun 2019 Oct 2017
[1] [2] [3]	<ul> <li>*A Study on the Android-based Security Analysis Technology <ul> <li>National Security Research (NSR)</li> </ul> </li> <li>A Study on the Security of Random Number Generator and Embedded Devices <ul> <li>Institute for Information &amp; Communications Technology Planning &amp; Evaluation</li> </ul> </li> <li>*A Study on the Firmware Emulation Technology for Linux-based Routers <ul> <li>NSR</li> </ul> </li> <li>A Development of Automated Reverse Engineering and Vulnerability Detection Base Technology through Binary Code Analysis <ul> <li>IITP</li> </ul> </li> </ul>	Jul 2017 – (IITP) May 2017 –	Jun 2019 Oct 2017 Dec 2018
<ul><li>[1]</li><li>[2]</li><li>[3]</li><li>[4]</li></ul>	<ul> <li>*A Study on the Android-based Security Analysis Technology <ul> <li>National Security Research (NSR)</li> </ul> </li> <li>A Study on the Security of Random Number Generator and Embedded Devices <ul> <li>Institute for Information &amp; Communications Technology Planning &amp; Evaluation</li> </ul> </li> <li>*A Study on the Firmware Emulation Technology for Linux-based Routers <ul> <li>NSR</li> </ul> </li> <li>A Development of Automated Reverse Engineering and Vulnerability Detection Base Technology through Binary Code Analysis <ul> <li>IITP</li> </ul> </li> </ul>	Jul 2017 – (IITP) May 2017 – Apr 2016 –	Jun 2019 Oct 2017 Dec 2018
<ul><li>[1]</li><li>[2]</li><li>[3]</li><li>[4]</li></ul>	<ul> <li>*A Study on the Android-based Security Analysis Technology <ul> <li>National Security Research (NSR)</li> </ul> </li> <li>A Study on the Security of Random Number Generator and Embedded Devices <ul> <li>Institute for Information &amp; Communications Technology Planning &amp; Evaluation</li> </ul> </li> <li>*A Study on the Firmware Emulation Technology for Linux-based Routers <ul> <li>NSR</li> </ul> </li> <li>A Development of Automated Reverse Engineering and Vulnerability Detection Base Technology through Binary Code Analysis <ul> <li>IITP</li> </ul> </li> <li>*A CAPTCHA Design based on Human Perception Characteristics <ul> <li>KAIST</li> </ul> </li> </ul>	Jul 2017 – (IITP) May 2017 – Apr 2016 –	Jun 2019 Oct 2017 Dec 2018 Dec 2016
<ul> <li>[1]</li> <li>[2]</li> <li>[3]</li> <li>[4]</li> <li>[5]</li> </ul>	<ul> <li>*A Study on the Android-based Security Analysis Technology <ul> <li>National Security Research (NSR)</li> </ul> </li> <li>A Study on the Security of Random Number Generator and Embedded Devices <ul> <li>Institute for Information &amp; Communications Technology Planning &amp; Evaluation</li> </ul> </li> <li>*A Study on the Firmware Emulation Technology for Linux-based Routers <ul> <li>NSR</li> </ul> </li> <li>A Development of Automated Reverse Engineering and Vulnerability Detection Base Technology through Binary Code Analysis <ul> <li>IITP</li> </ul> </li> <li>*A CAPTCHA Design based on Human Perception Characteristics <ul> <li>KAIST</li> </ul> </li> </ul>	Jul 2017 – (IITP) May 2017 – Apr 2016 – Apr 2016 –	Jun 2019 Oct 2017 Dec 2018 Dec 2016
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#### **OTHER ACTIVITIES**

[1]	Teaching Assistant, Introduction to Electronics Design Lab.	Fall 2019
	(EE305), KAIST	
[2]	Teaching Assistant, Discrete Methods for Electrical Engineering	Spring 2017
	(EE213), KAIST	
[3]	Teaching Assistant, Network Programming (EE324), KAIST	Fall 2016
[4]	Teaching Assistant, Cryptography Engineering (EE817/IS893),	Spring 2016
	KAIST	
[5]	Teaching Assistant, Security 101: Think Like an Adversary	Fall 2015
	(EE515/IS523), KAIST	
[6]	Student Representative of School of Computing, KAIST	Feb $2011 - Dec 2013$
[7]	Head Instructor, Information Security 101 for Freshmen (HSS062),	Sep 2011 – Feb 2013
	KAIST	
[8]	Teaching Assistant, Information Security 101 for Freshmen	Sep 2010 – Aug 2011
	(HSS062), KAIST	

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