

# Taekkyung Oh

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## BIO

Taekkyung Oh is a Ph.D student in System Security Lab at KAIST, advised by Professor Yongdae Kim. He received a Master degree from Graduate School of Information Security at KAIST. His research interests are Cellular Network Security, Wireless System Security, Cyber-Physical System (CPS) Security, and Usable Security.

## Education

<b>Ph.D</b>	<b>KAIST (Korean Advanced Institute of Science and Technology)</b>	Sep. 2021 – Present
	<ul style="list-style-type: none"> <li>Graduate School of Information Security</li> <li>Advisor: Yongdae Kim</li> </ul>	
<b>MS</b>	<b>KAIST (Korean Advanced Institute of Science and Technology)</b>	Sep. 2019 – Aug. 2021
	<ul style="list-style-type: none"> <li>Graduate School of Information Security</li> <li>Advisor: Yongdae Kim</li> </ul>	
<b>BS</b>	<b>SKKU (Sungkyunkwan University)</b>	Mar. 2012 – Aug. 2019
	<ul style="list-style-type: none"> <li>Electronic and Electrical Engineering</li> <li>Computer Engineering (double major)</li> </ul>	

## Publications

<b>Enabling Physical Localization of Uncooperative Cellular Devices</b>	PDF  Site 
<b>Taekkyung Oh</b> , Sangwook Bae, Junho Ahn, Yonghwa Lee, Tuan Dinh Hoang, Min Suk Kang, Nils Ole Tippenhauer, Yongdae Kim	
<i>Proceedings of the 30th Annual International Conference on Mobile Computing and Networking (ACM MobiCom 2024)</i>	
<b>LTESniffer: An Open-source LTE Downlink/Uplink Eavesdropper</b>	PDF  Code 
Tuan Dinh Hoang, CheolJun Park, Mincheol Son, <b>Taekkyung Oh</b> , Sangwook Bae, Junho Ahn, Beomseok Oh, Yongdae Kim	
<i>Proceedings of the 16th ACM Conference on Security and Privacy in Wireless and Mobile Networks (ACM WiSec 2023)</i>	
<b>Void: A Fast and Light Voice Liveness Detection System</b>	PDF 
Muhammad Ejaz Ahmed, Il-Youp Kwak, Jun Ho Huh, Iljoo Kim, <b>Taekkyung Oh</b> , Hyoungshick Kim	
<i>Proceedings of the 29th USENIX Security Symposium (Security 2020)</i>	
<b>Poster: I Can't Hear This Because I Am Human: A Novel Design of Audio CAPTCHA System</b>	PDF 
Jusop Choi, <b>Taekkyung Oh</b> , William Aiken, Simon S. Woo, Hyoungshick Kim	
<i>Proceedings of the 11th ACM Asia Conference on Computer and Communications Security (ACM ASI-ACCS 2018)</i>	

## Research Projects

<b>Tracking and identifying devices and call traffic in voice phishing ecosystem</b>	Apr. 2022 - Dec. 2024
<ul style="list-style-type: none"> <li>Funded 4.5 million USD by the Korean National Police Agency</li> <li>Project manager</li> </ul>	

### **Developing a technology for detecting an open-source based fake base station**

Feb. 2024 - Dec. 2024

- Funded 100K USD by the Korean National Intelligence Service (NIS)
- Project manager


## **Invited Talks**

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### **Testing, Analyzing, Improving Security of Cellular Networks with srsRAN**

Oct. 2023

Arlington, Virginia, USA

- srsRAN Project Workshop, Software Radio Systems (SRS)
- [Video \(with Yongdae Kim\)](#) 

### **Voice Phisher Intelligence: Location tracking and infrastructure vulnerability analysis**

Nov. 2022

Seoul, South Korea



- Security Intelligence Summit (SIS), S2W Inc. (cybersecurity company)

## **Security Reports**

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### **Incorrect handling of the malformed uplink scheduling message, resulting in an information leak of the UE in Samsung modem chipsets**





2024

- [CVE-2024-48883](#)  – [Samsung Security Bulletin](#) 
- Earned a total of 2,000 USD in bug bounty rewards from Google and Samsung

### **Incorrect error handling of the malformed downlink packet, resulting in system crash (memory corruption) in Qualcomm modem chipsets**



- [CVE-2024-48883](#)  – [Qualcomm Security Bulletin](#) 

### **Incorrect error handling of the malformed downlink packet, resulting in system crash (memory corruption) in MediaTek modem chipsets**

- [CVE-2024-20077](#)  – [MediaTek Security Bulletin](#) 
- [CVE-2024-20076](#)  – [MediaTek Security Bulletin](#) 

### **Vulnerability in radio control and uplink scheduling mechanism in LTE, GSM**

2023

- [CVD-2023-0070](#) 
- [CVD-2023-0077](#) 

## **Honors & Awards**

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### **Student Travel Grant for ACM MobiCom 2024**

Nov. 2024

- Funded 800 USD by ACM SIGMOBILE

### **Korean Government Scholarship**

Sep. 2019 - Present

- Full-Ride Scholarship

### **Undergraduate Research Conference in College of Software, SKKU**

Nov. 2018

- Bronze Prize

### **Dean's List, SKKU**

Sep. 2017 & Sep. 2018

- Reward for students who got obvious scholar performance (Top 5%)

### **Global Idea Contest by Daewoo Electronics**

Nov. 2017

- Development of noise canceling technique for home appliances
- Honorable Mention Award

### **Idea Contest of Assistive Technology Device for Disabled Students by the Korean Ministry of Education**

Dec. 2016

- Development of function-graph converter for blind

- First Prize (Minister's Award, Ministry of Education)

#### **Jinggeomdari Scholarship, SKKU**

Sep. 2016

- Scholarship for students who got obvious scholar performance (1,000 USD)

## **Experience**

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#### **KAIST**, Counseling Assistant

Feb. 2024 – Present

- Conducted over 30 student counseling sessions

#### **Republic of Korea Marine Corps**, External Security Advisor

Apr. 2023 – Dec. 2024

- Analyzing global trends in cyber warfare techniques and strategies

#### **Paper review**, External (secondary) reviewer

- IEEE Symposium on Security and Privacy (SP 2024)
- USENIX Security Symposium (Security 2023)
- Network and Distributed System Security Symposium (NDSS 2020 - 2021)

#### **KAIST**, Teaching Assistant

Sep. 2020 – Aug. 2022

- (EE488) Introduction to Cryptography Engineering | 2022 Spring
- (EE515) Theory of Hacking (Security 101) | 2021 Fall
- (CS448) Introduction to Information Security | 2021 Spring
- (IS521) Information Security Laboratory | 2020 Fall

#### **Republic of Korea Ministry of Education**, External Software Advisor

Dec. 2019

- Consulting on the development of Braille devices and assistive applications for visually impaired individuals

#### **SKKU Security Lab**, Undergraduate Researcher

Dec. 2016 - Dec. 2018

- Usable security and voice authentication (advised by Prof. Hyongshick Kim)

#### **SKKU System Consultant Group**, Web Developer

Mar. 2016 - Jul. 2017

- Full-stack developer for web applications (JavaScript, SQL, HTML, CSS)

#### **Republic of Korea Army**, Combat Engineer

Oct. 2013 - Jun. 2015

## **Languages & Skills**

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- Korean (Native)
- English (Upper intermediate)
- Python and CUDA
- C, C++
- LaTeX
- Web development (JavaScript, SQL, HTML, CSS)