

# 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

### LLFuzz: An Over-the-Air Dynamic Testing Framework for Cellular Baseband Lower Layers (To appear)

Tuan Dinh Hoang, **Taekkyung Oh**, CheolJun Park, Insu Yun Yongdae Kim  
*Proceedings of the 34th USENIX Security Symposium (Security 2025)*

PDF   
 Code   
 Media (KR)   
 Media (EN) 

### Passive Three-Dimensional User Equipment Tracking Using Long-Term Evolution Uplink Signals

Yoocho Jang, Juhong Park, **Taekkyung Oh**, Yongdae Kim, Soeng Ook Park  
*IEEE Transactions on Instrumentation and Measurement (IEEE TIM 2025)*

PDF 

### Enabling Physical Localization of Uncooperative Cellular Devices

**Taekkyung Oh**, Sangwook Bae, Junho Ahn, Yonghwa Lee, Tuan Dinh Hoang, Min Suk Kang, Nils Ole Tippenhauer, Yongdae Kim  
*Proceedings of the 30th Annual International Conference on Mobile Computing and Networking (ACM MobiCom 2024)*

PDF   
 Site 

### LTESniffer: An Open-source LTE Downlink/Uplink Eavesdropper

Tuan Dinh Hoang, CheolJun Park, Mincheol Son, **Taekkyung Oh**, Sangwook Bae, Junho Ahn, Beomseok Oh, Yongdae Kim  
*Proceedings of the 16th ACM Conference on Security and Privacy in Wireless and Mobile Networks (ACM WiSec 2023)*

PDF   
 Code 

### Void: A Fast and Light Voice Liveness Detection System

Muhammad Ejaz Ahmed, Il-Youp Kwak, Jun Ho Huh, Iljoo Kim, **Taekkyung Oh**, Hyounghshick Kim  
*Proceedings of the 29th USENIX Security Symposium (Security 2020)*

PDF 

### Poster: I Can't Hear This Because I Am Human: A Novel Design of Audio CAPTCHA System

Jusop Choi, **Taekkyung Oh**, William Aiken, Simon S. Woo, Hyounghshick Kim

PDF 

## Research Projects

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### Tracking and identifying devices and call traffic in voice phishing ecosystem

Apr. 2022 - Dec. 2024

- Funded 4.5 million USD by the Korean National Police Agency
- Project manager

### 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-2024-23385](#) – [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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### Outstanding Student Researcher Award, TTA

Apr. 2025

- Chair's Award, Telecommunications Technology Association

### 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

<b>Dean's List, SKKU</b>	Sep. 2017 & Sep. 2018
<ul style="list-style-type: none"> <li>• Reward for students who got obvious scholar performance (Top 5%)</li> </ul>	
<b>Global Idea Contest by Daewoo Electronics</b>	Nov. 2017
<ul style="list-style-type: none"> <li>• Development of noise canceling technique for home appliances</li> <li>• Honorable Mention Award</li> </ul>	
<b>Idea Contest of Assistive Technology Device for Disabled Students by the Korean Ministry of Education</b>	Dec. 2016
<ul style="list-style-type: none"> <li>• Development of function-graph converter for blind</li> <li>• First Prize (Minister's Award, Ministry of Education)</li> </ul>	
<b>Jinggeomdari Scholarship, SKKU</b>	Sep. 2016
<ul style="list-style-type: none"> <li>• Scholarship for students who got obvious scholar performance (1,000 USD)</li> </ul>	

## Experience

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<b>KAIST</b> , Counseling Assistant	Feb. 2024 – Present
<ul style="list-style-type: none"> <li>• Conducted over 30 student counseling sessions</li> </ul>	
<b>Republic of Korea Marine Corps</b> , External Security Advisor	Apr. 2023 – Dec. 2024
<ul style="list-style-type: none"> <li>• Analyzing global trends in cyber warfare techniques and strategies</li> </ul>	
<b>Paper review</b> , External (secondary) reviewer	
<ul style="list-style-type: none"> <li>• IEEE Symposium on Security and Privacy (SP 2024)</li> <li>• USENIX Security Symposium (Security 2023)</li> <li>• Network and Distributed System Security Symposium (NDSS 2020 - 2021)</li> </ul>	
<b>KAIST</b> , Teaching Assistant	Sep. 2020 – Aug. 2022
<ul style="list-style-type: none"> <li>• (EE488) Introduction to Cryptography Engineering   2022 Spring</li> <li>• (EE515) Theory of Hacking (Security 101)   2021 Fall</li> <li>• (CS448) Introduction to Information Security   2021 Spring</li> <li>• (IS521) Information Security Laboratory   2020 Fall</li> </ul>	
<b>Republic of Korea Ministry of Education</b> , External Software Advisor	Dec. 2019
<ul style="list-style-type: none"> <li>• Consulting on the development of Braille devices and assistive applications for visually impaired individuals</li> </ul>	
<b>SKKU Security Lab</b> , Undergraduate Researcher	Dec. 2016 - Dec. 2018
<ul style="list-style-type: none"> <li>• Usable security and voice authentication (advised by Prof. Hyongshick Kim)</li> </ul>	
<b>SKKU System Consultant Group</b> , Web Developer	Mar. 2016 - Jul. 2017
<ul style="list-style-type: none"> <li>• Full-stack developer for web applications (JavaScript, SQL, HTML, CSS)</li> </ul>	
<b>Republic of Korea Army</b> , 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)