

Minkyung Park

Assistant Professor

Department of Computer Science and Engineering
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I am a security researcher with a focus on system and network security.

PROFESSIONAL EXPERIENCE

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|---|-----------------------|
| Assistant Professor , Dept. Computer Science and Engineering, UNIST | Mar. 2026 — Current |
| Postdoctoral Researcher , Dept. Computer Science, University of Texas at Dallas <ul style="list-style-type: none">PI: Prof. Chung Hwan Kim | Nov. 2023 — Feb 2026 |
| Postdoctoral Researcher , Dept. Computer Science and Engineering, Seoul National University <ul style="list-style-type: none">PI: Prof. Taekyoung “Ted” Kwon | Sep. 2022 — July 2023 |

EDUCATION

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| Ph.D. in Computer Science and Engineering , Seoul National University <ul style="list-style-type: none">Thesis: Information Flow Control for Privacy-preserving Advertising.Keywords: Privacy-preserving Advertising, Information Flow Control, Intel SGX, Side/covert-channel Attack, Google NaCl (SFI)Advisor: Prof. Taekyoung “Ted” Kwon | March 2014 — August 2022 |
| B.S. in Computer Science and Engineering , Korea Aerospace University | March 2010 — February 2014 |

PUBLICATIONS (C: CONFERENCE | J: JOURNAL | P: POSTER)

- [C17] **DNN Latency Sequencing: Extracting DNN Architectures from Intel SGX Enclaves with Single-Stepping Attacks (to appear)**
- Minkyung Park**, Zelun Kong, Dave (Jing) Tian, Z. Berkay Celik, and Chung Hwan Kim Top Conference
 - Network and Distributed System Security Symposium (NDSS), February 2026
 - 한국정보과학회 최우수 학회, BK21플러스 IF Score 2
- [C16] **PAVE: Information Flow Control for Privacy-preserving Online Data Processing Services**
- Minkyung Park**, Jaeseung Choi, Hyeonmin Lee, and Taekyoung Kwon Top Conference
 - ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), March 2025
 - 한국정보과학회 최우수 학회, BK21플러스 IF Score 4
- [C15] **TZ-DATASHIELD: Automated Data Protection for Embedded Systems via Data-Flow-Based Compartmentalization**
- Zelun Kong, **Minkyung Park**, Le Guan, Ning Zhang, Chung Hwan Kim Top Conference
 - Network and Distributed System Security Symposium (NDSS), February 2025
 - 한국정보과학회 최우수 학회, BK21플러스 IF Score 2
- [C14] **A Study on Fuzzing the Linux Kernel Networking Subsystem Using Syzkaller**
- Subin Song, **Minkyung Park**, and Taekyoung Kwon
 - Annual Symposium of KIPS (ASK), May 2024
- [J13] **How to decentralized the internet: A focus on data consolidation and user privacy**
- Ted “Taekyoung” Kwon, Junghwan Song, Heeyoung Jung, Selin Chun, Hyunwoo Lee, Minhyeok Kang, **Minkyung Park**, Eunsang Cho
 - Computer Networks, Volume 234, October 2023
 - SCI-E
- [J12] **TwinPeaks: An Approach for Certificateless Public Key Distribution for the Internet and Internet of Things**
- Eunsang Cho, Jeongnyeo Kim, **Minkyung Park**, Hyeonmin Lee, Chorom Hamm, Soobin Park, Sungmin Sohn, Minhyeok Kang, Ted “Taekyoung” Kwon
 - Computer Networks, July 2020
 - SCI-E

[J11] An SGX-Based Key Management Framework for Data Centric Networking

- **Minkyung Park**, Jeongnyeo Kim, Youngho Kim, Eunsang Cho, Soobin Park, Sungmin Sohn, Minhyeok Kang, Ted “Taekyoung” Kwon
- IEEE Access, March 2020
- SCI-E

[J10] MaxPass: Credit-based multipath transmission for load balancing in data centers

- **Minkyung Park**, Sungmin Sohn, Kwangwook Kwon, Ted “Taekyoung” Kwon
- IEEE Journal of Communications and Networks (JCN), October 2019
- SCI-E

[C9] An SGX-Based Key Management Framework for Data Centric Networking

- **Minkyung Park**, Jeongnyeo Kim, Youngho Kim, Eunsang Cho, Soobin Park, Sungmin Sohn, Minhyeok Kang, Ted “Taekyoung” Kwon
- International Workshop on Information Security Applications (WISA), August 2019

[C8] D2TLS: Delegation-based DTLS for Cloud-based IoT Services

- Eunsang Cho, **Minkyung Park**, Hyunwoo Lee, Junhyeok Choi, and Ted “Taekyoung” Kwon
- ACM/IEEE Fourth International Conference on Internet-of-Things Design and Implementation (IEEE IoTDI) Montreal, Canada, April 2019

[C7] User-Centric Identity Management System Using Smart Contact

- Minhyeok Kang, **Minkyung Park**, and Ted “Taekyoung” Kwon
- Korean Institutes of Communications and Information Sciences Conference (KICS Conference) Jungsun, Korea 2018

[P6] Pay-Per-Use in User-Provided Networks: A Bitcoin-based Approach (poster)

- **Minkyung Park**, Soobin Park, Eunsang Cho and Ted “Taekyoung” Kwon
- International Conference on emerging Networking EXperiments and Technologies (ACM Conext) Incheon, Korea 2017

[C5] An Automatic Attendance Checking System using Smartphones: An Infrastructureless Approach

- Selin Chun, Myungchul Kwak, **Minkyung Park**, and Ted “Taekyoung” Kwon
- International Conference on Indoor Positioning and Indoor Navigation (IPIN) Sapporo, Japan 2017

[C4] TwinPeaks: A New Approach for Certificateless Public Key Distribution

- Eunsang Cho, **Minkyung Park**, Ted “Taekyoung” Kwon
- IEEE Conference on Communications and Network Security (IEEE CNS) Philadelphia, USA 2016

[P3] Privacy-preserving Authoriztaion Scheme for the Internet of Things (poster)

- **Minkyung Park**, Eunsang Cho and Ted “Taekyoung” Kwon
- The 11th International Conference on Future Internet Technologies (CFI) Nanjing, China 2016

[J2] Multi Server Password Authenticated Key Exchange Using Attribute-based Encryption

- **Minkyung Park**, Eunsang Cho and Ted “Taekyoung” Kwon
- The Journal of Korean Institute of Communications and Information Sciences (JKICS) 2015

[C1] Multi Server Password Authenticated Key Exchange Using Attribute-based Encryption

- **Minkyung Park**, Eunsang Cho and Ted “Taekyoung” Kwon
- Korean Institutes of Communications and Information Sciences Conference (KICS Conference) Jungsun, Korea 2015

PATENTS

동형 암호 병렬 연산 방법 및 이를 수행하는 컴퓨팅 장치 (Homomorphic cryptographic parallel computation method and computing device performing the same method)

- 권태경, 박민경, 강민혁, 천세린, 이현민
- Registration No. 10-2513552

데이터센터 네트워크의 부하 균형을 위한 신용 기반 다중경로 데이터 전송 방법 (CREDIT-BASED MULTIPATH TRANSMISSION METHOD FOR DATACENTER NETWORK LOAD BALANCING)

- 권태경, 최대진, 박민경, 손성민
- Registration No. 10-1932138

PROJECTS

Research on Fuzzing Techniques for libraries

- Role: Design and implement a fuzzer to find vulnerabilities in libraries
 - Keywords: Fuzz testing
- December 2024 — Present

Research on Privacy Attacks in Deep Learning Using Side-Channel Information

- Role: Design and implement model extraction attacks on deep neural networks (DNNs)
 - Keywords: DNN, side-channel attacks, Intel SGX, model extraction attacks
- November 2023 — November 2024

Development of Homomorphic Encryption and Trusted Execution Environment for Data Privacy

- Funded by Ministry of SMEs and Startups
- June 2022 — July 2023

Research on Grey-box Fuzzing Techniques for TLS Protocol

- Funded by KOREA INSTITUTE OF INFORMATION SECURITY & CRYPTOLOGY (KIISC)
- March 2022 — November 2022

Research on Traceability for Data Stability on Cloud-edge Lifecycle

- Funded by Institute for Information and Communications Technology Promotion (IITP)
- April 2020 — December 2021

Research on GPU Acceleration for Fully Homomorphic Encryption (FHE)

- Funded by KOREA INSTITUTE OF INFORMATION SECURITY & CRYPTOLOGY (KIISC)
- February 2020 — November 2020

Developing high-performance programming environments and computing systems

- Funded by National Research Foundation of Korea (NRF)
- November 2016 — June 2021

Research on Security Scheme for Interconnection of Heterogeneous Networks

- Funded by Electronics and Telecommunications Research Institute (ETRI)
- June 2019 — November 2019

Research on Decentralized Internet Architecture

- Funded by Electronics and Telecommunications Research Institute (ETRI)
- March 2019 — November 2019

Research on Security for Data-centric Platform

- Funded by Electronics and Telecommunications Research Institute (ETRI)
- November 2017 — March 2018

Research on Trust and Security Scheme for Interconnection of Heterogeneous Networks

- Funded by Electronics and Telecommunications Research Institute (ETRI)
- September 2018 — November 2018

Smartcampus: A Research on Localization Scheme based on Multiple Sensors

- Funded by Samsung Electronics
- May 2016 — December 2019

Mashup API Design Consultation for the Advancement of IoT Platform

- Funded by JC square
- January 2016 — March 2016

Development of Network Security Acceleration for Next-generation Low-power SoC

- Funded by Samsung Electronics
- July 2015 — December 2015

Study on IP-based IoT Security Architecture

- Funded by SK Telecom
- October 2014 — December 2014

Content Delivery Framework Using Spatial and Temporal Dynamics in Mobile networks

- Funded by National Research Foundation of Korea (NRF)
- March 2014 — April 2016

MISCELLANEOUS

Technical Advisor (volunteer work), Global IT Challenge

- Facilitated quiz activities and provided IT guidance at the IT Challenge, an international event supporting disabled children.
- March 2016 -- February 2017

Researcher, Samsung Software Membership

- Samsung Software Membership is an IT training program supported by Samsung Electronics.
- January 2012 -- December 2013