

Jiyeon Lee

Assistant Professor
School of Computer Science and Engineering,
Kyungpook National University

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RESEARCH INTERESTS

General Topics in Web Security and Privacy, Software Security, Cybercrime, Side-channel attacks

EDUCATION

Korea Advanced Institute of Science and Technology (KAIST) Mar. 2014 – Aug. 2021

Ph.D. in School of Computing

Thesis: Security Defects and Client-side Countermeasures on Emerging Web Technologies

Advisor: Insik Shin

Korea Advanced Institute of Science and Technology (KAIST) Feb. 2012 – Feb. 2014

M.S. in School of Computing

Thesis: Thread-level Priority Assignment in Global Multiprocessor Scheduling for Parallel Tasks

Advisor: Insik Shin

Dankook University Mar. 2007 – Feb. 2012

B.S. in Computer Science

WORK EXPERIENCE

Assistant, Kyungpook National University, South Korea Mar. 2023 – Current

School of Computer Science and Engineering

Postdoc Researcher, MISYS Lab, Soongsil Univ., South Korea Sep. 2021 – Feb. 2023

Advisor: Kilho Lee

Dependable Autonomous Vehicles, WebVR Side-channel Attacks

Research Intern, Microsoft Research Asia, China Apr. 2019 – Jun. 2019

Mentor: Yunxin Liu in Intelligent Cloud and Edge Group

Edge Intelligence

PUBLICATIONS

International publications

- Tracking WebVR User Activities through Hand Motions: An Attack Perspective**
Jiyeon Lee
IEICE Transactions on Information and Systems, Vol. E107-D, No. 8, pp.1089-1092, Aug. 2024
- Data-Similarity-based IoT Node Selection for UAV Trajectory Optimization**
Haoran Mei, Muhammad Fawad Khan, Limei Peng, Byungchul Tak, **Jiyeon Lee**, Pin-Han Ho
Elsevier Computers and Electrical Engineering, Vol. 112, Dec. 2023
- VRKeyLogger: Virtual Keystroke Inference Attack via Eavesdropping Controller Usage Pattern in WebVR**
Jiyeon Lee, Hyosu Kim, Kilho Lee
Elsevier Computers & Security, Vol. 134, Nov. 2023

4. **Spy in Your Eye: Spycam Attack via Open-Sided Mobile VR Device**
Jiyeon Lee, Kilho Lee
 IEICE TRANSACTIONS on Information and Systems, Vol.E105-D, No.10, pp.1817-1820, Oct. 2022
5. **Exploiting Missing Value Patterns for a Backdoor Attack on Machine Learning Models of Electronic Health Records: Development and Validation Study**
 Byunggil Joe, Yonghyeon Park (co-first), Jihun Hamm, Insik Shin, **Jiyeon Lee**
 JMIR Medical Informatics, Vol. 10, No. 8, Aug. 2022
6. **AdCube: WebVR Ad Fraud and Practical Confinement of Third-Party Ads**
 Hyunjoon Lee, **Jiyeon Lee (co-first)**, Daejun Kim, Suman Jana, Insik Shin, Sooel Son
 Proceedings of the 30th USENIX Security Symposium (Security 2021), Virtual, Aug. 2021
7. **CanvasMirror: Secure Integration of Third-Party Library in WebVR Environment**
Jiyeon Lee
 Doctoral Forum of 50th IEEE/IFIP Conference on Dependable Systems and Networks (DSN 2020), Virtual, Jun. 2020
8. **Pride and Prejudice in Progressive Web Apps: Abusing Native App-like Features in Web Applications**
Jiyeon Lee, Hayeon Kim, Junghwan Park, Insik Shin, Sooel Son
 Proceedings of the 25th ACM Conference on Computer and Communications Security (CCS 2018), Toronto, Canada, Oct. 2018
9. **Global EDF Schedulability Analysis for Parallel Tasks on Multi-core Platforms**
 Hoon Sung Chwa, Jinkyu Lee, **Jiyeon Lee**, Kieu-My Phan, Arvind Easwaran, Insik Shin
 IEEE Transactions on Parallel & Distributed Systems (TPDS), Vol. 28, No. 5, pp.1331-1345, May. 2017
10. **Thread-level Priority Assignment in Global Multiprocessor Scheduling for DAG Tasks**
Jiyeon Lee, Hoon Sung Chwa, Jinkyu Lee, Insik Shin
 Journal of Systems and Software (JSS), Vol. 113, pp. 246-256, Mar. 2016
11. **MC-Fluid: Fluid Model-based Mixed-Criticality Scheduling on Multiprocessors (Best Paper Runner-up Award)**
 Jaewoo Lee, Kieu-My Phan, Xiaozhe Gu, **Jiyeon Lee**, Arvind Easwaran, Insik Shin, Insup Lee
 Proceedings of the 35th IEEE Real-Time Systems Symposium (RTSS 2014), Rome, Italy, Dec. 2014
12. **Real-time Audio Coordination Framework for Immersive Sound Reproduction**
 Hyosu Kim, **Jiyeon Lee**, Hwidong Bae, Insik Shin
 Demo session at the 35th IEEE Real-Time Systems Symposium (RTSS@Work 2014), Rome, Italy, Dec. 2014
13. **Mobile Maestro: Enabling Immersive Multi-Speaker Audio Applications on Commodity Mobile Devices**
 Hyosu Kim, SangJeong Lee, Jung-Woo Choi, Hwidong Bae, **Jiyeon Lee**, Junehwa Song, Insik Shin
 Proceedings of the 16th ACM International Conference on Ubiquitous Computing (UBiComp 2014), Seattle, WA, US, Sep. 2014

Domestic Publications

1. **Analysis of Security Vulnerabilities and Personal Information Exposure Risks in Overleaf**
 Suzi Kim, **Jiyeon Lee**
 Journal of The Korea Society of Computer and Information, Vol. 29, No. 7, pp.109-115, Jul. 2024
2. **Metadata-based Backdoor Attack on Medical Neural Networks**
 Yonghyeon Park, Byunggil Joe, **Jiyeon Lee**, Minwoo Jeong, Insik Shin
 Workshop on Dependable and Secure Computing, Jeju, South Korea, Aug. 2021

3. **Parallel Task Multi-core Scheduling for Real-Time Cyber-Physical Systems**
Jiyeon Lee, Insik Shin
Telecommunications Review, Aug. 2015
4. **GPGPU Parallelization Techniques for Redundancy Elimination Algorithm (Best Paper Award)**
Byunggil Joe, Dae R. Jeong, **Jiyeon Lee**, Insik Shin
Korean Institute of Information Scientists and Engineers (KIISE 2014), Pyeongchang, South Korea, Dec. 2014
5. **GPU-SPARC: Accelerating Parallelism in Multi-GPU Real-Time Systems**
Wookhyun Han, Hwidong Bae, Hyosu Kim, **Jiyeon Lee**, Insik Shin
Technical Report, School of Computing, KAIST, CS-TR-2014-391, Aug. 2014
6. **RT-SDN: Adaptive Routing and Priority Ordering for Software-Defined Real-Time Networking**
Sangeun Oh, **Jiyeon Lee**, Kilho Lee, Insik Shin
Technical Report, School of Computing, KAIST, CS-TR-2014-387, Aug. 2014
7. **A Survey on Real-time Support for Mixed-criticality Cyber-Physical Systems**
Jaewoo Lee, **Jiyeon Lee**, Insik Shin
Korea Information Science Society, Vol. 31, No. 12, Dec. 2013
8. **Optimal Priority Assignment for Parallel Tasks under Fixed Priority Scheduling in Real-time Systems (Best Paper Award)**
Jiyeon Lee, Hoon Sung Chwa, Insik Shin
Korean Institute of Information Scientists and Engineers (KIISE 2013), Jeju, South Korea, Nov. 2013

HONORS & AWARDS

Student Grant , The 28th IEEE Network and Distributed System Security Symposium	Feb. 2021
EECS Rising Stars in Korea	Sep. 2020
STEM Research Team Project Fellowship , WISET	2020
Ph.D. Fellowship , NAVER Corporation	Nov. 2019
Bug Bounty , Samsung Internet push notification origin missing	Jan. 2019
KAIST-D'LIVE Research & Presentation Scholarship , D'LIVE	Dec. 2018
Student Travel Grant , The 25th ACM Computer and Communications Security	Oct. 2018
Best Paper Award , The 41st Korean Institute of Information Scientists and Engineers	Jan. 2015
Best Paper Runner-up , The 35th IEEE Real-Time Systems Symposium	Dec. 2014
Best Paper Award , The 40th Korean Institute of Information Scientists and Engineers	Nov. 2013
Excellent Records Awards , Dankook University	2010 – 2011

RESEARCH EXPERIENCE AS A PRINCIPAL INVESTIGATOR

First Research in life time , National Research Foundation of Korea Title: Security Research on XR for Safe Metaverse Amount: 72,450,000 won	Sep. 2023 – Feb.2026
New Faculty Startup Fund , Kyungpook National University Title: Study on Security Risks of Motion-Based Input in VR Amount: 9,000,000 won	Mar. 2023 – Feb. 2024
Post-Doc Domestic Training , National Research Foundation of Korea Title: Study of new security threats from motion-based input in AR/VR Amount: 60,000,000 won	Sep. 2022 – Feb. 2023