Hyeonmin LEE

PERSONAL INFORMATION

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HOMEPAGE: https://hyeonmin-lee.github.io/\|

I'm a Ph.D. candidate in the Department of Computer Science and Engineering at Seoul National University, advised by Prof. Taekyoung "Ted" Kwon.
My research interests focus on network security and (network) security measurement: Are we using the network correctly and safely (especially, about security protocols)? How can we make the network (more) safely?

- RESEARCH INTERESTS: Network Security and its Measurement

EDUCATION

MAR 2016 - FEB 2022	**Ph.D. Candidate**, Computer Science and Engineering, Seoul National University (SNU), Seoul, Republic of Korea • Dissertation: "Understanding the DANE Ecosystem in Email: How Is It Deployed and Managed?" • Advisor: Prof. Taekyoung "Ted" Kwon
MAR 2011 - FEB 2016	**B.S.**, Computer Science and Engineering, Seoul National University (SNU), Seoul, Republic of Korea
FALL 2014	**Visiting Student**, Information Technology, Uppsala University, Uppsala, Sweden

PUBLICATION

Under the Hood of DANE Mismanagement in SMTP (to appear)
Hyeonmin Lee, Md. Ishtiaq Ashiq, Moritz Müller, Roland van Rijswijk-Deij, Taekyoung "Ted" Kwon, Taejoong Chung
In Proceedings of the USENIX Security Symposium (**USENIX Security**),
Boston, United States, Aug 2022

A Longitudinal and Comprehensive Study of the DANE Ecosystem in Email
Hyeonmin Lee, Aniketh Gireesh, Roland van Rijswijk-Deij, Taekyoung "Ted" Kwon, Taejoong Chung
In Proceedings of the USENIX Security Symposium (**USENIX Security**),
Boston, United States, Aug 2020

Development of Cellular Core Network Enabling Network Function Virtualization
Hyeonmin Lee, Junghwan Song
The 28th Joint Conference on Communication and Information (**JCCI**),
Yeosu, Korea, May 2018

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
Elsevier Computer Networks (SCI-E)

Project Experiences

Apr 2020 - Present

Research on Traceability for Data Stability on Cloud-edge Lifecycle
- Supported by Institute for Information and Communication Technology Promotion (IITP)
- Role: Researcher / Programmer

Mar 2021 - Nov 2021

Abnormal Detection and Forensic Techniques using IoT Network Traffic Analysis
- Supported by Korea Institute of Information Security & Cryptology (KIISC)
- Role: Project Manager (Lab.) / Researcher / Programmer

Apr 2016 - Dec 2020

Versatile Network System Architecture for Multi-dimensional Diversity
- Supported by Institute for Information and Communication Technology Promotion (IITP)
- Role: Project Manager (Lab.) / System Designer / Programmer

Feb 2020 - Nov 2020

Research on GPU Acceleration for Fully Homomorphic Encryption
- Supported by Korea Institute of Information Security & Cryptology (KIISC)
- Role: Programmer

Sep 2019 - Apr 2020

Developing High-performance Programming Environments and Computing Systems
- Supported by National Research Foundation of Korea (NRF)
- Role: Programmer

Aug 2019 - Nov 2019

Research on Distributed Web Structure and Counterplan
- Supported by Korea Internet and Security Agency (KISA)
- Role: Researcher

Sep 2018 - Nov 2018

Research on Trust and Security Scheme for Interconnection of Heterogeneous Networks
- Supported by Electronics and Telecommunications Research Institute (ETRI)
- Role: Researcher

Aug 2016 - Feb 2019

Research and Development of Open 5G Reference Model
- Supported by Giga KOREA Foundation
- Role: System Designer / Programmer

Mar 2016 - May 2016

Content Delivery Framework Using Spatial and Temporal Dynamics in Mobile Networks
- Supported by National Research Foundation of Korea (NRF)
- Role: Programmer

Jul 2015 - Dec 2015

Development of Network Security Acceleration for Next-generation Low-power SoC
- Supported by Samsung Electronics
- Role: Programmer

PATENTS

Network System and Method for Performing Message Security Thereof
- Registration No. 1022656110000
- Republic of Korea, Jun. 10, 2021

Communication Method Based on Integrated Flat ID and System
- Registration No. 1020231150000
- Republic of Korea, Sep. 11, 2019

EXPERIENCES

MAY 2019 - AUG 2019	**Visiting Researcher** The Center for Cybersecurity, Rochester Institute of Technology, Rochester, USA • Topic: Measuring and analyzing the ecosystem of DANE protocol in Email
SPRING 2016	**Teaching Assistant** Dept. of Computer Science and Engineering, Seoul National University, Seoul, Korea • Class: Engineering Frontiers and Leadership 2

MISCELLANEOUS

MAR 2019 - FEB 2022	**Expert Research Personnel** (military service) Seoul National University, Seoul, Republic of Korea The expert research personnel system is a form of alternative military service in Republic of Korea, where the military service is fulfilled by conducting research at a domestic university or company for three years. I had not been involved in any military research project throughout the service.