HYUNSOO KIM | 김 현 수

Ph.D Student | 박사과정

Network Convergence and Security Lab (MMLAB)
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RESEARCH INTERESTS

Interested in network (OSI layer 3 and higher) in general with special focus on cyber security (TLS, PKI, Crypto); blockchain applications and consensus algorithms; traffic engineering and SDN/NFV. Industrial experience in Energy ICT and E-Mobility (Vehicular CAN, PLC – IPv6/TLS – XML/EXI/JSON).

EMPLOYMENT

Gridwiz Inc., Seongnam, Korea

Associate Researcher (as part of Korean military duty),   Mar. 2017 – Dec. 2020

- Communications and PKI Implementations in E-Mobility
- Blockchain-based Renewable Energy Trading (w/ Electron, London, UK)

EDUCATION

Seoul National University, Seoul, Korea

Ph.D in Computer Science and Engineering,   Mar. 2021 – *Current*

- Advisor: Taekyoung "Ted" Kwon

Sogang University, Seoul, Korea

M.S in Electronic Engineering,   Mar. 2015 – Feb. 2017

- Master Thesis: A QoS Aware IoT Traffic Smoothing Gateway Based on Non-preemptive Scheduling
- Advisor: Ju-Wook Jang

Sogang University, Seoul, Korea

B.S. in Electronic Engineering and B.A. in Economics,   Mar. 2009 – Feb. 2015

PUBLICATIONS

Conference Publications (International)

[1] Kim, Hyun-Soo, JungYub Lee, and Ju Wook Jang. "Blemesh: A wireless mesh network protocol for bluetooth low energy devices." 2015 3rd International Conference on Future Internet of Things and Cloud. IEEE, 2015.

[2] Chin, Won Sang, Kim, Hyun-soo, Heo, Young Ju, and Ju Wook Jang. "A Context-based Future Network Infrastructure for IoT Services." FNC/MobiSPC. 2015.

Conference Publications (Domestic)

[1] Kim, Hyun-soo, and Ju Wook Jang, "An MQTT-based Contents Delivery Platform Utilizing a Topic Virtualization Mashup Server (Topic 복합 가상화 매쉬업 서버를 특징으로 하는 MQTT 기반 콘텐츠 전달 플랫폼)." CEIC2016, IEIE, 2016.

[2] Kim, Hyun-soo, Moon Yong Jung, and Ju Wook Jang, "ML-based Real Time Traffic Classification for Future IoT Network Infrastructure (차세대 IoT 네트워크 인프라를 위한 기계학습 기반 실시간 트래픽 분류)." JCCI2016, KICS, 2016.

Journal Publications (Domestic)

[1] Kim, Hye-Young, Kim, Hyunsoo, and Shin, Bok-Deok, "A Research on Operational Stability of Demand Response Resource for Different Manufacturing Sub-sectors through Power Consumption Pattern Analysis (제조업별 전력소비 패턴 분석을 통한 수요자원의 감축 안정성에 관한 연구)." 조명·전기설비학회 논문지, 2017년 12월호, 한국조명·전기설비학회.

Patents (International and Domestic)

[1] Ju-Wook Jang, Hyun-soo Kim, "Publication/Subscription-based Content Delivery Platform System, Mashup Server, and a Content Delivery Method for Providing Mashup Content Trough Topic Virtualization," KR 101935014 B1 (WO 2018088604 A1), May 17, 2018.

[2] Ju-Wook Jang, Sung-min Oh, Hyun-soo Kim, "다수 종류의 네트워크들이 이더넷 백본을 통해 연결된 차량 네트워크에서 이더넷 메시지의 어드레싱 방법," KR 101601773 B1, March 9, 2016.

Standards (Domestic)

[1] Ju-Wook Jang, Hyun-soo Kim, Hong-jin Kim, Moon-yong Jeong, "A Security Framework to Provide Authentication/Non-repudiation and Data Integrity for ID-Based Search for Devices and Resources," Internet of Things Forum IoTFS-0108, Dec. 1st, 2016.

Major Projects

Seoul National University University, Seoul, Korea

Research on Ultra Reliable Aerial Network Framework Supporting High-density Urban Air Mobility
– UAM, URAN Cybersecurity,
ITRC   Jul. 2021 – *Current*

Abnormal Detection and Forensic Techniques using IoT Network Traffic Analysis,
KIISC   Mar. 2021 – *Current*

Gridwiz Inc., Seongnam, Korea

Development of energy trading blockchain platform and deployment of the pilot project,
KETEP   May. 2019 – Apr. 2020

Sogang University, Seoul, Korea

Enhancement of Blockchain Algorithms and Study on Next-Generation Application Schemes,
NRF   Jun. 2016 – Feb. 2017

A Study on Hyper Connected Self-Organizing Network Infrastructure Technologies for IoT Service,
IITP, 주관기관 실무책임   Mar. 2015 – Feb. 2017

Development of IoT Platform for Energy Management,
ITRC   Mar. 2015 – Feb. 2017

ACTIVITIES

Standardization (International)

ISO TC22 SC31/IEC TC69 JWG "Vehicle to Grid Communication Interface"   Aug. 2018 – Feb. 2020

- Project Team 2 Expert and Reviewer of ISO/DIS 15118-20

Open Charge Alliance   Mar. 2017 – *Current*

- Technical Working Group
- Participated in the development of OCPP 2.0, PKI Interoperability, etc.

LANGUAGE SKILLS

- **Korean**: Native
- **English**: Fluent (TEPS in 2014: **852**, TOEIC in 2016: **985**, TEPS scheduled on Sep. 19th)
- **Programming language**: C, Python, Solidity, R, MATLAB/Octave, UML