Heejae Park

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EDUCATION

Seoul National University of Science and Technology (SEOULTECH) — *03.2022 –*
Computer Science and Engineering / M.S. degree
Advisor: Laihyuk Park

Seoul National University of Science and Technology (SEOULTECH) — *03.2018 – 02.2022*
Computer Science and Engineering / B.S. degree (Summa Cum Laude, 4.28 / 4.5)
Advisor: Laihyuk Park

RESEARCH INTERESTS

Next-generation Network (5G, 6G), Reconfigurable Intelligent Surface (RIS), Multicast, Machine Learning, and Deep Learning.

R&D Projects

신뢰적 Internet of Energy 운용을 위한 스마트 시티 응용 기술 연구 — *06.2021 –*

- 참여연구원으로 참여.

V2X 망을 활용한 IoEV 무선 충전 스케줄링 및 블록체인 기반 Secured 통신 기법 개발 — *03.2018 – 02.2021*

- 참여연구원으로 참여.

AWARDS & HONORS

Seoul National University of Science and Technology Scholarship — *09.2018 – 02.2022*
Merit-based scholarships for seven semesters

PUBLICATIONS

Reconfigurable Intelligent Surface-assisted System Models for Uplink Communications.
Heejae Park, Tri-Hai Nguyen, Laihyuk Park.
International Conference on ICT Convergence 2022.

Deep Reinforcement Learning-based Partial Task Offloading in High Altitude Platform-aided Vehicular Networks.
Tri-Hai Nguyen, Thanh Phung Truong, Nhu-Ngoc Dao, Woongsoo Na, **Heejae Park**, Laihyuk Park.
International Conference on ICT Convergence 2022.

Federated Deep Learning for RIS-assisted UAV-enabled Wireless Communications.
Heejae Park, Tri-Hai Nguyen, Laihyuk Park.
International Conference on ICT Convergence 2022.

A Blockchain-Enabled Secure Digital Twin Framework for Early Botnet Detection in IIoT Environment.
Mikail Mohammed Salim, Alowonou Kowovi Comivi, Tojimurotov Nurbek, **Heejae Park** and Jong Hyuk Park.
Sensors 2022.

The Application of Machine Learning and Artificial Intelligence for Beyond 5G and 6G.
Heejae Park, Seongryool Wee, Laihyuk Park.
KICS Winter Conference 2021.

Challenges in Terahertz Technology for Extended Reality Application.
Seongryool Wee, **Heejae Park**, Laihyuk Park.
KICS Winter Conference 2021.

Trends and Examples of Private 5G.
Heejae Park, Laihyuk Park.

Information and Communications Magazine 2021.

Energy Hub Based Prosumer Electricity Scheduling Algorithm.
Heejae Park, Seongryool Wee, Laihyuk Park.
The Journal of Korean Institute of Communications and Information Science 2021.

Learning-based Frequency Synchronization with NTP for Low-cost Phasor Measurement Units.
Heejae Park, Seongryool Wee, Laihyuk Park.
International Conference on Information Networking 2021.

ACTIVITIES

2022 Qualcomm IT Tour — *08.15.2022 – 08.21.2022*

- Hosted by Qualcomm
- Presented to CEO Cristiano Amon at the San Diego headquarters on how to enhance the performance of IAB network by RIS-lens assisted UAV communication

Intelligent Communication, Computing and Energy Lab, Seoul National University of Science and Technology — *12.2019 –*

- **Participated as an undergraduate researcher.**

TEACHING EXPERIENCES

Introduction to Programming (1) at SEOULTECH — *Spring 2022*
Teaching Assistant

Probability and Random Variables at SEOULTECH — *Spring 2022*
Teaching Assistant

RECENT PROJECTS

Network congestion prediction using NS-3(Network Simulator) — *01.2021 – 06.2022*

- Predict network congestion in simulation environment.
- Collected data and related features from NS-3 point to point simulation.
- Used multiple ML models (SGD, SVC, TREE) with different parameters.

Smart Closet System for the Visually Impaired — *11.2021 – 12.2021*

- Tell you about color and type of clothes, when you film clothes on the camera.
- Used Pytorch framework (CNN), and transfer learning algorithm.
- Tacotron2 model was used for TTS (Text to Speech).

Recommendation for scouting soccer player — *09.2021 – 10.2021*

- Recommend soccer player based on the clustering results.
- Used KMeans clustering algorithm, and the performance metrics are inertia, and silhouette score.
- Used PCA, and TSNE to visualize the results.

Stock Recommendation using Natural Language Processing — *05.2021 – 06.2021*

- Recommend to the user based on the fact that if the number of positive tweets is more than three times the number of negative tweets, program recommends buying it.
- Used TextBlob library to get sentimental score, and results are shown in Word Cloud.