

Heejae Park

232, Gongreung-ro, Nowon-gu, Seoul, Republic of Korea
prkhj98@seoultech.ac.kr | <https://kyoungjunpark.github.io>

EDUCATION

The University of Texas at Austin (UT Austin)

Computer Science / Ph.D. degree

Advisor: Lili Qiu

06.2022 –

Korea Advanced Institute of Science and Technology (KAIST)

School of Computing / M.S. degree (Outstanding Thesis Award, 3.95 / 4.3)

Advisor: Myungchul Kim

03.2017 –

02.2019

Chung-Ang University

Computer Science Engineering / B.S. degree (Summa Cum Laude, 4.28 / 4.5)

Advisor: Sungrae Cho

03.2013 –

02.2017

RESEARCH INTERESTS

Mobile and Ubiquitous Computing, Multimedia, Machine Learning, Deep Learning, and Next-generation Networking.

AWARDS & HONORS

Best Research Award at Tmax Group

1st place among the first-year research engineers at the Tmax group

01.2020

Outstanding Thesis Award at KAIST's School of Computing

For a master's thesis titled "Environment-Aware Video Streaming Optimization of Power Consumption"

02.2019

The DLive Scholarship

\$3K support for the presentation of the international conference (IEEE INFOCOM)

01.2019

Qualcomm-KAIST Innovation Awards

\$5K research grant awarded by Qualcomm to challenging and creative science and engineering students

09.2018

Chung-Ang University Scholarship

Merit-based scholarships for seven semesters

09.2013 –

02.2017

PUBLICATIONS

(Under Major Review) NeuSaver: Neural Adaptive Power Consumption Optimization for Mobile Video Streaming

Kyoungjun Park, Myungchul Kim, Laihyuk Park.

IEEE Transactions on Mobile Computing (TMC).

EVSO: Environment-aware Video Streaming Optimization of Power Consumption.

Kyoungjun Park, Myungchul Kim.

IEEE International Conference on Computer Communications (INFOCOM) 2019. (acceptance ratio = 19.7%, 288/1464)

Energy-Efficient Mobile Charging for Wireless Power Transfer in Internet of Things Networks.

Woongsoo Na, Junho Park, Cheol Lee, Kyoungjun Park, Joongheon Kim, Sungrae Cho.

IEEE Internet of Things Journal 2018.

ACTIVITIES

Young Engineers Honor Society (YEHS) Regular Member

- An organization under the National Academy of Engineering of Korea (NAEK)
- Volunteered as a high school seminar presenter and a mentor in the middle school engineering

11.2015 –

classroom.

2016 Qualcomm IT Tour

06.27.2016 –
07.02.2016

- Hosted by Qualcomm.
- Presented to CEO Derek at the San Diego headquarters on how to advance the technology.

Ubiquitous Computing Lab, Chung-Ang University

01.2015 –
06.2016

- Participated as an undergraduate researcher.
 - Conducted research on efficient clustering techniques for mobile chargers with wireless charging.
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TEACHING EXPERIENCES

[CS360] Instruction to Database at KAIST

Spring 2018

Teaching Assistant

[CS408] Computer Science Project at KAIST

Fall 2017

Teaching Assistant

RECENT PROJECTS

Recommendation & Guide for Exploratory Data Analysis (EDA) in Jupyter Notebook

- Recommended to the user for the next analysis action and the proper parameterization of analysis actions (e.g., group-by, filter, chart type, pivot).
- Developed a crawling module using GitHub's API to collect and a filtering process that only selects meaningful EDA notebooks scattered on the data center.
- Developed a customized python debugger/interpreter that can access the function call to understand the contents of python codes and processed it into training data.
→ Tracked a total of 60 functions in libraries such as pandas, matplotlib, etc.
- Utilized various models such as RNN and regression to learn user's analysis know-how and insight.

01.2021 –
06.2022

Analysis Recommendation According to User's Preference

- Recommended charts/graphs that users are likely to see based on past user preferences.
- Applied the deep learning model based on YouTube's recommendation model.
- Utilized various models including ARIMA and isolation-forest to analyze data features.

02.2019 –
01.2021

Video Streaming Optimization using Reinforcement Learning

- Video analysis through various observations such as network traffic, and similarity between video frames when streaming videos
- Used the A3C technique for the training algorithm, which is the latest actor-critic method including two neural networks.

07.2018 –
01.2021

Maritime Connectivity Platform

- A communication framework enabling efficient electronic information exchange between all authorized maritime stakeholders across available communication systems
- Developed Maritime Messaging Service that allows maritime stakeholders to communicate seamlessly.

03.2017 –
12.2018