# Kyoungjun Park

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## EDUCATION

**The University of Texas at Austin (UT Austin)** — *06.2022 –*
*Computer Science / Ph.D. degree*
*Advisor: Lili Qiu*

**Korea Advanced Institute of Science and Technology (KAIST)** — *03.2017 – 02.2019*
*School of Computing / M.S. degree (Outstanding Thesis Award, 3.95 / 4.3)*
*Advisor: Myungchul Kim*

**Chung-Ang University** — *03.2013 – 02.2017*
*Computer Science Engineering / B.S. degree (Summa Cum Laude, 4.36 / 4.5)*
*Advisor: Sungrae Cho*

## RESEARCH INTERESTS

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

## EMPLOYMENT

**Microsoft Research Asia** — *07.2022 – 08.2022*
*Research Intern*

**TmaxData Co., Ltd.** — *02.2019 – 06.2022*
*For military service (Technical Research Personnel)*
*Research Engineer & Team Leader (06.2021 – 06.2022)*

## AWARDS & HONORS

**Best Research Award at Tmax Group** — *01.2020*
*1st place among the first-year research engineers at the Tmax group*

**Outstanding Thesis Award at KAIST's School of Computing** — *02.2019*
*For a master's thesis titled "Environment-Aware Video Streaming Optimization of Power Consumption"*

**The DLive Scholarship** — *01.2019*
*$3K support for the presentation of the international conference (IEEE INFOCOM)*

**Qualcomm-KAIST Innovation Awards** — *09.2018*
*$5K research grant awarded by Qualcomm to challenging and creative science and engineering students*

**Chung-Ang University Scholarship** — *09.2013 – 02.2017*
*Merit-based scholarships for seven semesters*

## PUBLICATIONS

(Submitted) Joint Video Bitrate and Satellite Selection in LEO Satellite Networks
Cheng Luo *, **Kyoungjun Park ***, Zhiyuan He *, Lili Qiu, Changhan Ge, Muhammad Muaz, Yuqing Yang. (* Equal Contributions)
20th USENIX Symposium on Networked Systems Design and Implementation (NSDI) 2023.

NeuSaver: Neural Adaptive Power Consumption Optimization for Mobile Video Streaming
**Kyoungjun Park**, Myungchul Kim, Laihyuk Park.
IEEE Transactions on Mobile Computing (TMC) 2022.

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.

## PATENTS

Method to analyze data (Application filed in the USA & KR)
**Kyoungjun Park**, Youngkwang Lee, Saemaro Moon, Changho Hwang

Method and apparatus of video streaming (Korean title: 비디오 스트리밍 방법 및 장치) — *09.2020 –*
Myungchul Kim, **Kyoungjun Park**.
South Korea, 10-2153801

## ACTIVITIES

**Young Engineers Honor Society (YEHS) Regular Member** — *11.2015 –*
- 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 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.

## TEACHING EXPERIENCES

**[CS371M] Mobile Computing at UT Austin** — *Fall 2022*
Teaching Assistant

**[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** — *01.2021 – 06.2022*
- 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.

**Analysis Recommendation According to User's Preference** — *02.2019 – 01.2021*
- 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.

**Video Streaming Optimization using Reinforcement Learning**

*07.2018 – 01.2021*

- 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.

**Maritime Connectivity Platform**

*03.2017 – 12.2018*

- 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.