# Kyoungjun Park

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## 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, 4.36 / 4.5)*
*Advisor: Sungrae Cho*

*03.2013 –
02.2017*

## RESEARCH INTERESTS

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

## EMPLOYMENT

**Microsoft Research Asia**
*Research Intern*

*07.2022 –
08.2022*

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

*02.2019 –
06.2022*

## AWARDS & HONORS

**Best Research Award at Tmax Group**
*$1^{st}$ 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

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.

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## PATENTS

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|---|---|
| Method to analyze data (Application filed in the USA & KR)<br>**Kyoungjun Park**, Youngkwang Lee, Saemaro Moon, Changho Hwang | |
| Method and apparatus of video streaming (Korean title: 비디오 스트리밍 방법 및 장치)<br>Myungchul Kim, **Kyoungjun Park**.<br>South Korea, 10-2153801 | *09.2020 –* |

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## ACTIVITIES

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|---|---|
| **Young Engineers Honor Society (YEHS) Regular Member**<br>• An organization under the National Academy of Engineering of Korea (NAEK)<br>• Volunteered as a high school seminar presenter and a mentor in the middle school engineering classroom. | *11.2015 –* |
| **2016 Qualcomm IT Tour**<br>• Hosted by Qualcomm.<br>• Presented to CEO Derek at the San Diego headquarters on how to advance the technology. | *06.27.2016 –*<br>*07.02.2016* |
| **Ubiquitous Computing Lab, Chung-Ang University**<br>• Participated as an undergraduate researcher.<br>• Conducted research on efficient clustering techniques for mobile chargers with wireless charging. | *01.2015 –*<br>*06.2016* |

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## TEACHING EXPERIENCES

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| **[CS371M] Mobile Computing at UT Austin**<br>Teaching Assistant | *Fall 2022* |
| **[CS360] Instruction to Database at KAIST**<br>Teaching Assistant | *Spring 2018* |
| **[CS408] Computer Science Project at KAIST**<br>Teaching Assistant | *Fall 2017* |

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## RECENT PROJECTS

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|---|---|
| **Recommendation & Guide for Exploratory Data Analysis (EDA) in Jupyter Notebook**<br>• Recommended to the user for the next analysis action and the proper parameterization of analysis actions (e.g., group-by, filter, chart type, pivot).<br>• 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.<br>• 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.<br>→ Tracked a total of 60 functions in libraries such as pandas, matplotlib, etc.<br>• Utilized various models such as RNN and regression to learn user's analysis know-how and insight. | *01.2021 –*<br>*06.2022* |
| **Analysis Recommendation According to User's Preference**<br>• Recommended charts/graphs that users are likely to see based on past user preferences.<br>• Applied the deep learning model based on YouTube's recommendation model.<br>• Utilized various models including ARIMA and isolation-forest to analyze data features. | *02.2019 –*<br>*01.2021* |
| **Video Streaming Optimization using Reinforcement Learning**<br>• Video analysis through various observations such as network traffic, and similarity between video frames when streaming videos | *07.2018 –*<br>*01.2021* |

- Used the A3C technique for the training algorithm, which is the latest actor-critic method including two neural networks.

**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*