

Kyoungjun Park

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EDUCATION

The University of Texas at Austin (UT Austin)

Computer Science / Ph.D. degree

06.2022 –

Advisor: Lili Qiu

Korea Advanced Institute of Science and Technology (KAIST)

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

03.2017 –

02.2019

Advisor: Myungchul Kim

Chung-Ang University

Computer Science Engineering / B.S. degree (Summa Cum Laude, 4.36 / 4.5)

03.2013 –

02.2017

Advisor: Sungrae Cho

RESEARCH INTERESTS

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

EMPLOYMENT

Microsoft Research Asia @ Shanghai

Research Intern

07.2022 –

08.2022

TmaxData Co., Ltd. @ South Korea

For military service (Technical Research Personnel)

02.2019 –

06.2022

Research Engineer & Team Leader (06.2021 – 06.2022)

AWARDS & HONORS

Best Research Award @ Tmax Group

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

01.2020

Outstanding Thesis Award @ 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

Real-Time Neural Video Recovery and Enhancement on Mobile Devices (One-shot revision)

Zhaoyuan He, Yifan Yang, Lili Qiu, **Kyoungjun Park**

ACM International Conference on Emerging Networking Experiments and Technologies (CoNEXT) 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)

Myungchul Kim, **Kyoungjun Park**

South Korea, 10-2153801

09.2020 –

TEACHING EXPERIENCES

[CS378] Introduction to Human-Computer Interaction @ UT Austin

Teaching Assistant

Fall 2023

[CS331] Algorithms and Complexity @ UT Austin

Teaching Assistant

Spring 2023

[CS371M] Mobile Computing @ UT Austin

Teaching Assistant

Fall 2022

[CS360] Instruction to Database @ KAIST

Teaching Assistant

Spring 2018

[CS408] Computer Science Project @ KAIST

Teaching Assistant

Fall 2017

RECENT PROJECTS

Understanding of mmWave Signal Distribution in Room Layout using Diffusion Methods

- Embedded not only 2d room image but 3d features into the diffusion model using multi-scale design.
- Ablation studies comparing the result with the existing mmWave simulator that generates the heatmap of the signal strength using raytracing.

08.2023 –

Joint Optimization of Handoff and Video Rate in LEO Satellite Networks

- The first exploration of video streaming in LEO satellite networks; it is important to design a handover strategy to explicitly consider video performance.
- Our algorithms include (i) model predictive control (MPC) based approach and (ii) reinforcement learning (RL) based approach, i.e., PPO.

06.2022 –
06.2023

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).
- Applied the deep learning model based on YouTube's recommendation model.
- Utilized RNN and regression to learn user's analysis know-how and insight.

06.2021 –
06.2022

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