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, Reinforcement Learning, Generative AI, and Next-generation Networking.

EMPLOYMENT

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

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

AWARDS & HONORS

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

Outstanding Thesis Award @ 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

Real-Time Neural Video Recovery and Enhancement on Mobile Devices
Zhaoyuan He, Yifan Yang, Lili Qiu, **Kyoungjun Park**, Yuqing Yang
ACM International Conference on Emerging Networking Experiments and Technologies (CoNEXT) 2024

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

TEACHING EXPERIENCES

[CS356] Computer Networks @ UT Austin *Fall 2024*
Teaching Assistant

[CS303E] Elems of Computers/Programming @ UT Austin *Spring 2024*
Teaching Assistant

[CS378] Introduction to Human-Computer Interaction @ UT Austin *Fall 2023*
Teaching Assistant

[CS331] Algorithms and Complexity @ UT Austin *Spring 2023*
Teaching Assistant

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

[CS360] Instruction to Database @ KAIST *Spring 2018*
Teaching Assistant

[CS408] Computer Science Project @ KAIST *Fall 2017*
Teaching Assistant

RECENT PROJECTS

World Models with Signals *02.2024 –*
- Generated more accurate video from stable video diffusion with various signals, i.e., lidar, radar, and Wi-Fi.
- Identified more effective scenarios when utilizing signal information than when using only video.

RF Signal Generation using Diffusion Methods *08.2023 – 02.2024*
- Embedded both 2d room image and 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.

Joint Optimization of Handoff and Video Rate in LEO Satellite Networks *06.2022 – 06.2023*
- 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.

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.