

Juheon Yi

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Research Interests

- Edge AI Systems
- Video Analytics
- Mixed Reality

Education

PhD, Computer Science and Engineering, Seoul National University, Korea *Feb 2024*

Advisor: Youngki Lee

MS, Electrical and Computer Engineering, Seoul National University, Korea *Aug 2018*

Advisor: Sunghyun Choi

BS, Electrical and Computer Engineering, Seoul National University, Korea *Aug 2016*

Experiences

Nokia Bell Labs, Cambridge, United Kingdom *Dec 2023 – Present*

Researcher Scientist

Nokia Bell Labs, Cambridge, United Kingdom *Sep 2021 – Nov 2021*

Researcher Intern

Institute of New Media and Communications, SNU, Korea *Sep 2018 – May 2020*

Researcher (as part of alternative military service)

Honors and Awards

- Microsoft Research Ph.D. Fellowship *2020*
- Awarded to top 12 Ph.D. students in the Asia-Pacific region
- Best Ph.D. Dissertation Award, Dept. of CSE, SNU *2024*
- Sang Lyul Min Systems Research Fellowship, Dept. of CSE, SNU *2024*
- Best Paper Award Runner-up, ACM ImmerCom 2023 *2023*
- Best Graduate Student Award, BK21 SNU *2022*
- AI Star Fellowship, AI Institute of SNU *2021*
- Star Researcher Award, Dept. of CSE, SNU *2021*
- Best Paper Award, ACM Students in MobiSys 2021 *2021*
- Global Ph.D. Fellowship, National Research Foundation of Korea *2021*
- Presidential Science Scholarship, Korea Student Aid Foundation *2012-2016*
- Awarded to top 100 freshmen in Korea

Publications

Full Papers

- [ACM MobiCom 2024] Kichang Yang, Minkyung Jeong, **Juheon Yi**, Jingyu Lee, Kyungsoo Park, and Youngki Lee, “Logan: Loss-Tolerant Live Video Analytics System.”
(Acceptance rate: 19.1% = 55/288)

- [ACM UIST 2024] HyunA Seo, **Juheon Yi**, Rajesh Balan, and Youngki Lee, “GradualReality: Enhancing Physical Object Interaction in Virtual Reality via Interaction State-Aware Blending.” (Acceptance rate: 24.0% = 146/608)
- [ACM MobiCom 2023] Kyungjin Lee, **Juheon Yi**, and Youngki Lee, “FarfetchFusion: Towards Fully Mobile Live 3D Telepresence Platform.” (Acceptance rate: 29.4% = 40/136, summer round)
- [IEEE ICASSP 2023] Hyunseok Oh, **Juheon Yi**, and Youngki Lee, “Papez: Resource-efficient Speech Separation with Auditory Working Memory.”
- [IEEE TMC 2022] **Juheon Yi**, Seongwon Kim, Joongheon Kim, and Sunghyun Choi, "Supremo: Cloud-Assisted Low-Latency Super-Resolution in Mobile Devices."
- [IEEE INFOCOM 2022] Kichang Yang, **Juheon Yi**, Kyungjin Lee, and Youngki Lee, “FlexPatch: Fast and Accurate Object Detection for On-Device High-Resolution Live Video Analytics.” (Acceptance rate: 19.9%=225/1129)
- [ACM MobiCom 2020] **Juheon Yi** and Youngki Lee, “Heimdall: Mobile GPU Coordination Platform for Augmented Reality Applications.” (Acceptance rate: 17.8% = 39/218, winter round)
- [ACM MobiCom 2020] Kyungjin Lee, **Juheon Yi**, Youngki Lee, Sunghyun Choi, and Young Min Kim, “GROOT: A Real-time Streaming System for High-Fidelity Volumetric Videos.” (Acceptance rate: 17.8% = 39/218, winter round)
- [ACM MobiCom 2020] **Juheon Yi**, Sunghyun Choi, and Youngki Lee, “EagleEye: Wearable Camera-based Person Identification in Crowded Urban Spaces.” (Acceptance rate: 17.2% = 24/139, summer round)
- [IEEE TMC 2019] Jonghoe Koo, **Juheon Yi**, Joongheon Kim, Mohammad A. Hoque, and Sunghyun Choi, "Seamless Dynamic Adaptive Streaming in LTE/Wi-Fi Integrated Network under Smartphone Resource Constraints."
- [IEEE SECON 2018] **Juheon Yi**, Weiping Sun, Jonghoe Koo, Seongho Byeon, Jaehyuk Choi, and Sunghyun Choi, “BlueScan: Boosting Wi-Fi Scanning Efficiency Using Bluetooth Radio.” (Acceptance rate: 23.2% = 49/211)
- [ACM Multimedia 2017] Jonghoe Koo, **Juheon Yi**, Joongheon Kim, Mohammad A. Hoque, and Sunghyun Choi, "REQUEST: Seamless Dynamic Adaptive Streaming over HTTP for Multi-Homed Smartphone under Resource Constraints." (Acceptance rate: 28.3% = 191/675)

Workshops, Posters, and Demo

- [ACM ImmerCom 2023] Seokgyeong Shin, **Juheon Yi**, Minkyung Jeong, and Youngki Lee, “FAST: Fast and Accurate Adaptation in Live Video Analytics Using Intermediate Features.”
** Best Paper Award Runner Up**
- [ACM SenSys 2022 Poster] Hyunwoo Jung, **Juheon Yi**, and Youngki Lee, “A Study on Thermal Issues in Mobile Extended Reality Applications.”
- [ACM MobiSys 2022 Poster] HyunA Seo, **Juheon Yi**, and Youngki Lee, “LIVE: Life-Immersive Virtual Environment with Physical Interaction-aware Adaptive Blending.”
- [ACM AIChallengeIoT 2021] **Juheon Yi**, Chulhong Min, and Fahim Kawsar, “Vision Paper: Towards Software-Defined Video Analytics with Cross-Camera Collaboration.”
- [ACM Students in MobiSys 2021] **Juheon Yi**, "Mobile-Cloud Cooperative Deep Learning Platform for Mixed Reality Applications." ** Best Paper Award **

Professional Services

Technical Program Committee

- ACM ImmerCom 2024 (collocated with ACM MobiCom 2024)

- EuroSys 2022 (Shadow PC)
- ACM SenSys 2022 (Shadow PC)
- ACM Wireless of the Students, by the Students, and for the Students (S³) Workshop 2021 (collocated with ACM MobiCom 2021)
- ACM MobiSys 2023 (Artifact Evaluation Committee)

External Reviewer

- Journal: IEEE TMC, IEEE Systems Journal, ACM IMWUT
- Conference: VRST 2024, BMVC 2024, ACM UIST 2024, IEEE VR 2024, ACM CSCW 2024, CogSci 2024, ISMAR 2023, IEEE VR 2023, HAI 2022, IEEE WCNC 2020, 2019, IEEE DySPAN 2018

Other Organizing Committee

- IEEE/ACM COMSNETS 2025 (Publicity Co-Chair)

Invited Talks

- “Mobile-Cloud Cooperative AI Platform for Scalable Video Analytics”
- Rising Star Spotlight, SNU Summer AI School 2022 *Aug 2022*
- “Mobile AI Platform for Mixed Reality”
- IEEE Information Theory Society, Santa Clara Valley *Feb 2022*
- Electronic & Information Research Information Center (EIRIC), Korea *Mar 2021*
- A3 Foresight Workshop
on Intelligent IoT for Empowering the People’s Lifestyle and Well-being *Jan 2021*