

Hyunho Yeo (Ph.D. Candidate)

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RESEARCH INTERESTS	Networked Systems, Machine Learning Systems	
EDUCATION	Korea Advanced Institute of Science and Technology (KAIST) Ph.D. in Electrical Engineering (Advisor: Dongsu Han)	FEB. 2017 ~ FEB. 2023 (Expected)
	Korea Advanced Institute of Science and Technology (KAIST) B.S. in Electrical Engineering (Magna Cum Laude)	FEB. 2012 ~ FEB. 2017
PUBLICATIONS	<ol style="list-style-type: none"> Engorgio: Neural Video Enhancement at Scale <u>Hyunho Yeo</u>, Hwijoon Lim, Jaehong Kim, Youngmok Jung, Juncheol Ye, and Dongsu Han ACM SIGCOMM 2022 (Acceptance Rate 55/281: 19.5%) NEMO: Enabling Neural-enhanced Video Streaming on Commodity Mobile Devices <u>Hyunho Yeo</u>, Chan Ju Chong, Youngmok Jung, Juncheol Ye, and Dongsu Han ACM MobiCom 2020 (Acceptance Rate 62/384: 16.1%) Neural-Enhanced Live Streaming: Improving Live Video Ingest via Online Learning Jaehong Kim*, Youngmok Jung*, <u>Hyunho Yeo</u>, Juncheol Ye, and Dongsu Han ACM SIGCOMM 2020 (Acceptance Rate 53/250: 21.2%) Neural Adaptive Content-aware Internet Video Delivery <u>Hyunho Yeo</u>, Youngmok Jung, Jaehong Kim, Jinwoo Shin, and Dongsu Han USENIX OSDI 2018 (Acceptance Rate 47/257: 18.2%) How will Deep Learning Change Internet Video Delivery? <u>Hyunho Yeo</u>, Sunghyun Do, Dongsu Han ACM HotNets 2017 (Acceptance Rate 28/124: 22.5%) 	
HONORS & AWARDS	Google Travel Grants (2022), KAIST Breakthrough of the Year (2021), KAIST Global Leader Scholarship (2020), Microsoft Fellowship Asia Nomination Award (2019), KAIST EE Best Research Achievement (2018)	
RESEARCH PROJECTS	Neural-enhanced Live Streaming at Scale ($\approx 10.1K$ LoC) AUG. 2020 – AUG. 2022 <ul style="list-style-type: none"> Designed a framework that delivers efficient and scalable neural enhancement for live streams. Implemented the framework on top of TensorRT (GPU inference engine), libvpx (VP9 codec), and gRPC. Reduced computing cost by 3.0-22.3\times or improved processing throughput by 2.5-10\times. Real-time Neural-enhanced Video Streaming on Mobile Devices ($\approx 9.4K$ LoC) NOV. 2018 – JUL. 200 <ul style="list-style-type: none"> Designed a framework that accelerates video super-resolution using codec-level information. Implemented the framework upon Exoplayer (Android media player) and libvpx (VP9 codec). Improved processing throughput by 11.5\times and reduced energy consumption by 88.6%. Neural-enhanced Internet Video Delivery ($\approx 13.6K$ LoC) MAR. 2017 – OCT. 2018 <ul style="list-style-type: none"> Designed the first video delivery framework that applies DNNs to video using the client's computations. Implemented the framework on top of MPEG DASH (dash.js) and TensorFlow. Improved user-quality of experience by 43.08% or saved 17.13% of network bandwidth for adaptive streaming. 	
PROFICIENT SKILLS	Programming Languages: C/C++, Python, JAVA, UNIX shell scripting Machine Learning Frameworks: Tensorflow, Pytorch, Qualcomm SNPE, NVIDIA TensorRT Languages: Korean (native), English (fluent)	
ACADEMIC ACTIVITIES	Journal Review: IEEE Transactions on Networking, IEEE Multimedia Mentoring Experience (Undergraduate students): Suro Kim, Seung Ho Baek, Seung Jun Lee, Tee Won Lee, Yonatan Gizachew, Chan Ju Chong, Su Min Shin, Ji Hoon Shin, Sung Whan Kim, Jae Hong Kim, Young Mok Jung, Sunghyun Do	