Cheeun Hong

Ph.D. Candidate

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🌐 https://cheeunhong.github.io

🐱 https://github.com/Cheeun

Ⓖ link

RESEARCH INTERESTS

I am interested in **green deep learning** that considers energy consumption and carbon emissions during model training and inference. My previous works are mainly focused on developing **efficient inference** techniques, including **network quantization and pruning**, to create lightweight models. I have also explored **test-time adaptation** of computational resources in several projects. Recently, I have been working on lightweight models for **low-level vision problems**, but my broader research goal is to compress any computationally demanding models.

EDUCATION

Seoul National University – Seoul, Korea

Integrated Ph.D. in Electrical and Computer Engineering, Mar. 2020 - Present

Advisor: Prof. Kyoung Mu Lee

Seoul National University – Seoul, Korea

B.S. in Electrical and Computer Engineering, Mar. 2015 - Feb. 2020

University of Applied Sciences and Arts Northwestern Switzerland – Switzerland

Exchange Student in Computer Science, Fall 2017

PUBLICATIONS

[International Conferences]

Overcoming Distribution Mismatch in Quantizing Image Super-Resolution Networks

Cheeun Hong and Kyoung Mu Lee, In European Conference on Computer Vision (**ECCV**), 2024.

[Acceptance rate: 27.9%]

AdaBM: On-the-Fly Adaptive Bit Mapping for Image Super-Resolution

Cheeun Hong and Kyoung Mu Lee, In Conference on Computer Vision and Pattern Recognition (**CVPR**), 2024.

[Acceptance rate: 23.6%]

Content-Aware Dynamic Quantization for Image Super-Resolution

Cheeun Hong, Sungyong Baik, Heewon Kim, Seungjun Nah, and Kyoung Mu Lee, In European Conference on Computer Vision (**ECCV**), 2022.

[Acceptance rate: 28.0%]

Attentive Fine-Grained Structured Sparsity for Image Restoration

Junghun Oh, Heewon Kim, Seungjun Nah, <u>Cheeun Hong</u>, Jonghyun Choi, and Kyoung Mu Lee, In Conference on Computer Vision and Pattern Recognition (**CVPR**), 2022.
[Acceptance rate: 25.3%]

DAQ: Channel-Wise Distribution-Aware Quantization for Deep Image Super-Resolution Networks
<u>Cheeun Hong</u>*, Heewon Kim*, Sungyong Baik, Junghun Oh, and Kyoung Mu Lee, In Winter Conference on Applications of Computer Vision (**WACV**), 2022.
[Acceptance rate: 35.0%]

Batch Normalization Tells You Which Filter is Important
Junghun Oh, Heewon Kim, Sungyong Baik, <u>Cheeun Hong</u>, and Kyoung Mu Lee, In Winter Conference on Applications of Computer Vision (**WACV**), 2022.
[Acceptance rate: 35.0%]

[Journals]

CoLaNet: Adaptive Context and Latent Information Blending for Face Image Inpainting
JoonKyu Park, <u>Cheeun Hong</u>, Sungyong Baik, and Kyoung Mu Lee, IEEE Signal Processing Letters, 2023.

[Preprints]

Diversity, Plausibility, and Difficulty: Dynamic Data-Free Quantization
<u>Cheeun Hong</u>*, Sungyong Baik*, Junghun Oh, and Kyoung Mu Lee, Submitted for publication, 2024.

ACADEMIC EXPERIENCES

• Served as a reviewer for **CVPR** (2022, 2023, 2024), **ICCV** (2023), **ECCV** (2022, 2024), **TNNLS**
• Transferred technology **Fast Deep Super-Resolution Algorithm**, SNU R&DB, 2021

AWARDS & HONORS

• **Youlchon AI Star Scholarship**   2024
• **Best Paper Award at IPIU 2021** (33rd Workshop on Image Processing and Image Understanding)   2021
• **The Grand Prize at Hynix Internship Program**   2018

TALKS

• **AIIS Fall Retreat, SNU** ("Content-Aware Dynamic Quantization for Image Super-Resolution")   2022

INTERNSHIP

Machine Intelligence and Pattern Analysis Lab (MIPAL) – Seoul National University, Korea
Student Intern, Jun. 2019 – Aug. 2019
Mentor: Prof. Nojun Kwak

DRAM circuit design team – SK Hynix, Korea

Engineering Intern, Jun. 2018 – Aug. 2018

Teaching Experience

Seoul National University

Teaching Assistant in *Recent Trends in Computer Vision, Spring 2022*
Teaching Assistant in *Introduction to Computer Vision, Spring 2022*

REFERENCES

Advisor   **Kyoung Mu Lee**
Professor
Seoul National University
kyoungmu@snu.ac.kr
https://cv.snu.ac.kr/index.php/kmlee