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 usage and carbon emissions during model training and inference. Among the various compression technologies to obtain lightweight models, my previous works are mainly focused on **efficient inference** approaches such as **network quantization and pruning**. Specifically, several projects are about **test-time adaptation** of computational resources based on the sensitivity of the input image to compression (i.e., the less sensitive the input is, the fewer computational resources that are allocated). Although my latest projects are on compressing models for **low-level image restoration** problems, my research goal is to compress any deep learning model with massive computations.

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]

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.

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.

[Citations: 18 | Acceptance rate: 28.0%]

Attentive Fine-Grained Structured Sparsity for Image Restoration

Junghun Oh, Heewon Kim, Seungjun Nah, Cheeun Hong, Jonghyun Choi, and Kyoung Mu Lee, In Conference on Computer Vision and Pattern Recognition (**CVPR**), 2022.

[Citations: 14 | Acceptance rate: 25.3%]

DAQ: Channel-Wise Distribution-Aware Quantization for Deep Image Super-Resolution Networks

Cheeun Hong*, Heewon Kim*, Sungyong Baik, Junghun Oh, and Kyoung Mu Lee, In Winter Conference on Applications of Computer Vision (**WACV**), 2022.

[Citations: 33 | Acceptance rate: 35.0%]

Batch Normalization Tells You Which Filter is Important

Junghun Oh, Heewon Kim, Sungyong Baik, Cheeun Hong, and Kyoung Mu Lee, In Winter Conference on Applications of Computer Vision (**WACV**), 2022.

[Citations: 7 | Acceptance rate: 35.0%]

[Journals]

CoLaNet: Adaptive Context and Latent Information Blending for Face Image Inpainting

JoonKyu Park, Cheeun Hong, Sungyong Baik, and Kyoung Mu Lee, IEEE Signal Processing Letters, 2023.

[Preprints]

Overcoming Distribution Mismatch in Quantizing Image Super-Resolution Networks

Cheeun Hong and Kyoung Mu Lee, Submitted for publication, 2023.

Diversity, Plausibility, and Difficulty: Dynamic Data-Free Quantization

Cheeun Hong*, 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), **TNNLS**
• Transferred technology **Fast Deep Super-Resolution Algorithm**, SNU R&DB, 2021

AWARDS

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

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**
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Seoul National University
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https://cv.snu.ac.kr/index.php/kmlee