Dongjin Kim

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Research Interests

I am interested in improving the quality of visual content and accelerating such content creation algorithms. My research topics include denoising, super-resolution, video stabilization and image/video generation.

Education

Hanyang University *Seoul, S.Korea*

Ph.D. in Computer Science *Mar. 2021 - present*

- Advisor: Prof. Tae Hyun Kim

Konkuk University *Seoul, S.Korea*

B.S. in Computer Science *Mar. 2021*

Publications

* denotes equal contribution.

Continuous Degradation Modeling via Latent Flow Matching for Real-World Super-Resolution. ***Under Review***

Hyeonjae Kim*, **Dongjin Kim***, Eugene Jin, Tae Hyun Kim

Diffusion-Based sRGB Real Noise Generation via Prompt-Driven Noise Representation Learning. ***Under Review***

Jaekyun Ko*, **Dongjin Kim***, Guanghui Wang, Tae Hyun Kim

IDF: Iterative Dynamic Filtering Networks for Generalizable Image Denoising. ***ICCV 2025***

Dongjin Kim*, Jaekyun Ko*, Muhammad Kashif Ali, Tae Hyun Kim *[pdf] [project page]*

Harnessing Meta-Learning for Improving Full-Frame Video Stabilization. ***CVPR 2024***

Muhammad Kashif Ali, Eunwoo Lim, **Dongjin Kim**, Tae Hyun Kim *[pdf] [project page]*

sRGB Real Noise Modeling via Noise-Aware Sampling with Normalizing Flows. ***ICLR 2024***

Dongjin Kim*, Donggoo Jung*, Sungyong Baik, Tae Hyun Kim *[pdf] [project page]*

Task Agnostic Restoration of Natural Video Dynamics. ***ICCV 2023***

Muhammad Kashif Ali, **Dongjin Kim**, Tae Hyun Kim *[pdf] [project page]*

Learning Controllable Degradation for Real-World Super-Resolution via Constrained Flows. ***ICML 2023***

Seobin Park*, **Dongjin Kim***, Sungyong Baik, Tae Hyun Kim *[pdf] [project page]*

Services

Conference Reviewer: CVPR, ICCV, WACV, NeurIPS, ICML, ICLR, AAAI

Journal Reviewer: IEEE TPAMI

Projects

High Frame Rate Video Quality Enhancement. *Seoul, S.Korea*

COLLABORATION WITH SAMSUNG *Sep. 2023 - Present*

Low-Light and Real-World Video Enhancement. *Seoul, S.Korea*

COLLABORATION WITH HANWHA *Dec. 2021 - Dec. 2022*

Patents

Metadata-Free Real-World Noisy Image Generation. *KR Patent App.*

Tae Hyun Kim, Jaekyun Ko, **Dongjin Kim** *10-2024-0180252*

Dec. 2024

Full-Frame Video Stabilization Method using Meta-Learning. *KR Patent App.*

Tae Hyun Kim, Muhammad Kashif Ali, Eunwoo Lim, **Dongjin Kim** *10-2024-0043687*

Mar. 2024

Synthetic Dataset Generation Method for Real-World Super-Resolution at Arbitrary Scales. *KR Patent App.*

Tae Hyun Kim, **Dongjin Kim**, Seobin Park *10-2022-0186535*

Dec. 2022

Experience

Hanyang University *Seoul, S.Korea*

Research Assistant, advised by Tae Hyun Kim *2021 - Present*

- Model continuous real-world degradations to generate realistic LR images from HR inputs, enabling superior super-resolution across arbitrary scales.
- Propose a noise-generation framework capable of synthesizing diverse noisy images without relying on any metadata, using prompt learning.
- Propose a lightweight denoising network that significantly improves generalization performance on unseen, out-of-distribution noise. **[ICCV 2025]**
- Propose to enhance the quality and stability of pixel-level synthesis solutions for video stabilization using meta-learning. **[CVPR 2024]**
- Propose a noise generation framework that can classify noise based on camera settings and generate various noisy images. **[ICLR 2024]**
- Propose a novel framework capable of inferring consistent video dynamics solely from the inconsistent videos. **[ICCV 2023]**
- Propose to generate realistic SR datasets for unseen degradation levels by exploring the latent space of real LR images. **[ICML 2023]**

Konkuk University *Seoul, S.Korea*

Undergraduate Research Intern, advised by Eun Yi Kim *2020 - 2021*

- Developed a real-time video monitoring system that can detect human behavior and provide notification services for dangerous situations. **[Minister's Award]**
- Improve a method of emergency situation detection using driver electroencephalography (EEG) signals with a LSTM-based model.

Korean Augmentation To the United States Army, Republic of Korea Army *Camp Casey, S.Korea*

Information Technology Specialist, Seargant (mandatory military service) *2015 - 2017*

- Manage military communication systems, networks, and computer infrastructure to ensure efficient and secure information exchange in support of mission objectives.

Honors & Awards

Minister's Prize (1 out of 40 teams), Software development contest, Ministry of Science and ICT, South Korea 2020

Grand Prize (1 out of 82 teams), Undergraduate Project Competition, Konkuk University 2020

Merit-based Scholarship (2 semesters), Konkuk University 2019