Dong Un Kang

Contact Information

Affirmation: Intelligent Computational Imaging Lab. (ICL), Seoul National University (SNU)
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Education

Seoul National University (SNU) — Seoul, Korea
Ph.D. Student in Electrical and Computer Engineering — Mar. 2021 – Aug. 2025 (Expected)
Advisor: Se Young Chun

Ulsan National Institute of Science and Technology (UNIST) — Ulsan, Korea
M.S. in Electrical and Computer Engineering — Mar. 2019 – Feb. 2021
Advisor: Se Young Chun

Ulsan National Institute of Science and Technology (UNIST) — Ulsan, Korea
B.S. in Electrical and Computer Engineering & Chemical Engineering — Mar. 2012 – Feb. 2019
Summa cum laude GPA: 3.9/4.3

Experience

KATUSA (Korean Augmentation To the United States Army) — Daegu, Korea
Republic of Korea Army — Feb. 2016 - Nov. 2017

Student Intern, BMIPL, UNIST — Ulsan, Korea
Adviser: Prof. Se Young Chun — Feb. 2018 - Feb. 2019

License

Engineer Chemical Industry (Korea)

Research Interest

Recent research interests are multi-modal AI, especially exploring large vision and language models for computer vision (CV) tasks.

- Large Vision-Language Models for CV tasks
- Large Multimodal Models (with LLM) for CV tasks
- Multimodal Generative AI

Also, I'm interested in the image restoration tasks such as deblurring and denoising.

Publications

- **Class Distribution-induced Attention Map for Open-vocabulary Semantic Segmentations**
  D U Kang, H Kim, S Y Chun
  Accepted to International Conference on Learning Representations **(ICLR)**, 2025

- **Concept Pinpoint Eraser for Text-to-image Diffusion Models via Residual Attention Gate**
  B H Lee*, S Lim*, S Lee, **D U Kang**, S Y Chun
  Accepted to International Conference on Learning Representations **(ICLR)**, 2025

- **Class Concept Representation from Contextual Texts for Training-Free Multi-Label Recognition**
  D U Kang*, H Lee*, S Y Chun (*co-first authors)
  Accepted to IEEE **Access**, 2025

- **Focusing on Representation of Multi-Head Attention for Open-Vocabulary Semantic Segmentation**
  D U Kang, S Y Chun
  Accepted to International Conference on Electronics, Information, and Communication **(ICEIC)**, IEEE, 2025

- **BeyondScene: Higher-Resolution Human-Centric Scene Generation With Pretrained Diffusion**
  G Kim*, H Kim*, H Seo*, **D U Kang***, S Y Chun (***co-first authors**)
  Accepted to European Conference on Computer Vision **(ECCV)**, 2024

- **Self-supervised denoising in PET considering real noise characteristics**
  D J Mun, **D U Kang**, S Y Chun
  Accepted to 36th Workshop on Image Processing and Image Understanding **(IPIU)**, 2024

- **BlindHarmony: "Blind" Harmonization for MR Images via Flow model**
  H Jeong, H Byun, **D U Kang**, J Lee
  Accepted to IEEE International Conference on Computer Vision **(ICCV)**, 2023

- **PAIP 2020: Microsatellite Instability Prediction in Colorectal Cancer**
  K M Kim*, K B Lee*, S D Cho*, **D U Kang*** et al. (including S Y Chun**), (***co-first authors**, **co-corresponding authors)
  Accepted to **Medical Image Analysis (IF 10.7)**, 2023

- **Multi-Scale Curriculum Learning For Efficient Automatic Whole Slide Image Segmentation**
  D U Kang, S Y Chun
  Accepted to AI-BioHealth Workshop, **IEEE BigComp** 2022

- **Development and Operation of A Digital Platform for Sharing Pathology Image Data**
  Y Kang et al. (including W J Hong, **D U Kang**, S Y Chun)
  Accepted to BMC Medical Informatics and Decision Making , 2021

- **Multi-Temporal Recurrent Neural Networks For Progressive Non-Uniform Single Image Deblurring With Incremental Temporal Training**
  D W Park*, **D U Kang***, S Y Chun (***co-first authors**)
  Accepted to European Conference on Computer Vision **(ECCV)**, 2020 **(Spotlight)**

- **Preliminary Studies On Training And Fine-Tuning Deep Denoiser Neural Networks In Learned D-AMP For Undersampled Real MR Measurements**
  H V Kim* **D U Kang***, S Y Chun (***co-first authors**)
  Accepted to IEEE International Symposium on Biomedical Imaging **(ISBI)** Workshop 4-Page Paper 2020

- **NTIRE 2019 Challenge on Video Super-Resolution: Methods and Results**
  S Nah et al. (including K Y Kim, **D U Kang**, S Y Chun)
  Accepted to IEEE Conference on Computer Vision and Pattern Recognition **(CVPR)** Workshops pp. 1985-95, Jun 2019

Preprints

- **Blur More To Deblur Better: Multi-Blur2Deblur For Efficient Video Deblurring**
  D W Park*, **D U Kang***, S Y Chun (*co-first authors)
  arXiv preprint, 2020

Projects

- **Development of a Pathology Diagnosis CDSS and Establishment of a Learning Platform Using Artificial Intelligence** 2019 – 2023
  funded by the Ministry of Health and Welfare
  Automatic Prostate Tumor Algorithm Development, Hosting PAIP Challenges
- **Research on Image Quality Enhancement for Defect Inspection in Semiconductor Process** 2022 – 2025
  funded by the Samsung Electronics Co., Ltd.
  Image Enhancement AI Model Development
- **Research on ecDNA based Diagnosis and Treatment Technologies for Cancer** 2023 – 2025
  funded by the National Research Foundation of Korea
  ecDNA Detection Algorithm Development

Patents

- **Deep Learning-Based Image Deblurring Method And Apparatus**
  S Y Chun, D W Park, **D U Kang**,
  U.S. Patent, Granted, No. 11,645,738, 2023
- **Deep learning-based image deblurring method and apparatus performing the same**
  S Y Chun, D W Park, **D U Kang**,
  Korean Patent, Granted, No. 10-2336103, 2021

Awards

- **3rd Place Award of Ego4D challenge on Short-term Object Interaction Anticipation, CVPR 2024**
  H Cho, **D U Kang**, S Y Chun

Services

- **Conference reviewers:** ICCV 2025, ICML 2025, CVPR 2025, ICLR 2025, CVPR 2024, NeurIPS 2024