

Sanghyun Son

Contact Information

Affiliation: Department of ECE, ASRI, Seoul National University (SNU), Seoul, Korea
Address: 1 Gwanak-ro 133-508, Gwanak-gu, Seoul, Korea, 08826
Email: sonsang35(at)gmail.com, thstkdgus35(at)snu.ac.kr
Github: <https://github.com/sanghyun-son>
Homepage: <https://sanghyun-son.github.io>
Google scholar: [link](#)

Education

Integrated **Ph.D.** program in Department of ECE Mar. 2017 – Present
Seoul National University (SNU), Seoul, Korea
Advisor: Kyoung Mu Lee

B.S. in Department of ECE - *summa cum laude* Mar. 2013 – Feb. 2017
Seoul National University (SNU), Seoul, Korea

Publications

- Wooseok Lee, **Sanghyun Son**, and Kyoung Mu Lee, “AP-BSN: Self-Supervised Denoising for Real-World Images via Asymmetric PD and Blind-Spot Network,” In **CVPR**, 2022.
- Reyhaneh Neshatavar, Mohsen Yavartanoo, **Sanghyun Son**, and Kyoung Mu Lee, “CVF-SID: Cyclic Multi-Variate Function for Self-Supervised Image Denoising by Disentangling Noise from Image,” In **CVPR**, 2022.
- Seungjun Nah, **Sanghyun Son**, Jaerin Lee, and Kyoung Mu Lee, “Clean Images are Hard to Reblur: Exploiting the Ill-Posed Inverse Task for Dynamic Scene Deblurring,” In **ICLR**, 2022.
- Geonwoon Jang, Wooseok Lee, **Sanghyun Son**, and Kyoung Mu Lee, “C2N: Practical Generative Noise Modeling for Real-World Denoising,” In **ICCV**, 2021.
- **Sanghyun Son** and Kyoung Mu Lee, “SRWarp: Generalized Image Super-Resolution under Arbitrary Transformation,” In **CVPR**, 2021.
- **Sanghyun Son**^{*}, Jaeha Kim^{*}, Wei-Sheng Lai, Ming-Hsuan Yang, and Kyoung Mu Lee, “Toward Real-World Super-Resolution via Adaptive Downsampling Models,” IEEE Trans. on Pattern Analysis and Machine Intelligence (**TPAMI**), *accepted*.
- **Sanghyun Son** and Kyoung Mu Lee, “Image Super-Resolution,” in Ikeuchi K. (eds) Computer Vision. Springer, Cham, 2021. https://doi.org/10.1007/978-3-030-03243-2_838-1
- Seungjun Nah, **Sanghyun Son**, and Kyoung Mu Lee, “Recurrent Neural Networks with Intra-Frame Iterations for Video Deblurring,” In **CVPR**, 2019.
- **Sanghyun Son**, Seungjun Nah, and Kyoung Mu Lee, “Clustering Convolutional Kernels to Compress Deep Neural Networks,” In **ECCV**, 2018.
- Bee Lim, **Sanghyun Son**, Heewon Kim, Seungjun Nah, and Kyoung Mu Lee, “Enhanced Deep Residual Networks for Single Image Super-Resolution,” **NTIRE 2017** workshop in conjunction with **CVPR**, 2017. (**Challenge Winners, Workshop Best Paper**)

Challenge Reports and Dataset

- **Sanghyun Son**, Suyoung Lee, Seungjun Nah, Radu Timofte, and Kyoung Mu Lee, “NTIRE 2021 Challenge on Video Super-Resolution,” **NTIRE 2021** workshop in conjunction with **CVPR**, 2021.
- Seungjun Nah, **Sanghyun Son**, Suyoung Lee, Radu Timofte, and Kyoung Mu Lee, “NTIRE 2021 Challenge on Image Deblurring,” **NTIRE 2021** workshop in conjunction with **CVPR**, 2021.
- **Sanghyun Son**, Jaerin Lee, Seungjun Nah, Radu Timofte, and Kyoung Mu Lee, “AIM 2020 Challenge on Video Temporal Super-Resolution,” **AIM 2020** workshop in conjunction with **ICCV**, 2020.
- Seungjun Nah, **Sanghyun Son**, Radu Timofte, and Kyoung Mu Lee, “NTIRE 2020 Challenge on Image and Video Deblurring,” **NTIRE 2020** workshop in conjunction with **CVPR**, 2020.
- Seungjun Nah, **Sanghyun Son**, Radu Timofte, and Kyoung Mu Lee, “AIM 2019 Challenge on Video Temporal Super-Resolution: Methods and Results,” **AIM 2019** workshop in conjunction with **ICCV**, 2019.
- Seungjun Nah, Sungyong Baik, Seokil Hong, Gyeongsik Moon, **Sanghyun Son**, Radu Timofte, and Kyoung Mu Lee, “NTIRE 2019 Challenge on Video Deblurring and Super-Resolution: Dataset and Study,” **NTIRE 2019** workshop in conjunction with **CVPR**, 2019.

Service

Workshop Challenge Co-organizer

NTIRE 2021 Challenge on Video Super-Resolution, Video Deblurring NTIRE 2021 workshop in conjunction with CVPR, 2021	Jun. 2021
AIM 2020 Challenge on Video Temporal Super-Resolution AIM 2020 workshop in conjunction with ECCV, 2020	Aug. 2020
AIM 2019 Challenge on Video Temporal Super-Resolution AIM 2019 workshop in conjunction with ICCV, 2019	Sep. 2019

Conference Reviewer

CVPR, ECCV, ICCV, and the corresponding Workshops

Journal Reviewer

TPAMI, TIP, CVIU, IJCV, TCI

Internship

Student Research Intern	Jan. 2019 - Jun. 2019
Research Topic: Single Image Super-Resolution for the Real-World Images	
Google Cloud, Sunnyvale, CA, USA	
Mentor: Ming-Hsuan Yang	

Teaching Assistant

EE729.003: Advanced Trends in Computer Vision (ATCV) Seoul National University, Seoul, Korea	Sep. 2020 – Dec. 2020
Neural Processing Expert (NPEX): Image Restoration Lab. Samsung Electronics SNU Cooperation R&D Center, Seoul, Korea	Sep. 2020
EE729.001: Topics in Control and Automation Seoul National University, Seoul, Korea	Sep. 2019 – Dec. 2019
Neural Processing Expert (NPEX): Image Restoration Lab. Samsung Electronics SNU Cooperation R&D Center, Seoul, Korea	Jul. 2019
EE306: Signal and Systems Seoul National University, Seoul, Korea	Mar. 2017 – Jun. 2017

Research Projects

Ongoing project (Private) Hanwha Techwin	Dec. 2021 – Present
Raw Food Image Generation by Domain Adaptation Samsung Research	Dec. 2020 – Dec. 2021

Awards and Honors

- **Winner** of Qualcomm Innovation Fellowship Korea 2021.
- **Highly Cited Paper Award** from Department of ECE, SNU, 2018.
- **1st Place Award** in NTIRE 2017 Challenge on Single Image Super-Resolution.
- **Best Paper Award** of NTIRE 2017 Workshop: Challenge Track.

Scholarships

• Kwanjeong Scholarship , Kwanjeong Educational Foundation	2017 – 2018
• National Scholarship for Science & Engineering , Korea Student Aid Foundation	2015 – 2016
• Scholarship of Academic Excellence , Seoul National University	2013 – 2014

Skills

PyTorch, Python, C++, MATLAB, CUDA, L^AT_EX

Research Interests

I am interested in deep learning and low-level image restoration problems, especially image super-resolution, denoising, and deblurring. Recently I mainly working on reconstructing high-resolution images from real-world inputs. My research topics also include network optimization and acceleration to handle practical issues in deep learning.

References

Advisor Kyoung Mu Lee
 Professor
 Seoul National University
 kyoungmu(at)snu.ac.kr
 <https://cv.snu.ac.kr/index.php/kmlee>

Mentor Ming-Hsuan Yang
 Professor
 UC Merced
 mhyang(at)ucmerced.edu
 <http://faculty.ucmerced.edu/mhyang>