

# Seungjun Nah

## Contact Information

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## Research Interests

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

## Education

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March 2014 - Seoul National University  
August 2021 Ph.D. in School of Electrical and Computer Engineering  
Advisor: Kyoung Mu Lee

March 2010 - Seoul National University  
February 2014 B.S. in School of Electrical and Computer Engineering

## Experiences

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- Senior Research Scientist, NVIDIA Corporation, Santa Clara, CA, USA, 04.2024 - current
- Research Scientist, NVIDIA Corporation, Santa Clara, CA, USA, 01.2022 - 03.2024
- Postdoctoral Researcher, Seoul National University, Seoul, Korea, 09.2021 - 11.2021
- Guest Scientist, Max Planck Institute for Intelligent Systems, Tübingen, Baden-Württemberg, Germany, 04.2019 - 10.2019
- Research Intern, Microsoft Corporation, Redmond, WA, USA, 05.2017 - 08.2017

## Awards and Honors

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- Outstanding Reviewer: CVPR 2021, ICCV 2019, 2021, ECCV 2020, 2022
- KCCV Sang-Uk Lee Prize, 2022
- Distinguished Dissertation Award: Department of ECE, SNU, 2021
- CVPR 2021 Doctoral Consortium
- Highly Cited Paper Award: Department of ECE, SNU, 2018
- AWS Cloud Credits for Research, 2018
- Challenge Winner & Best Paper: NTIRE 2017 Challenge on Single Image Super-Resolution
- Microsoft Azure Research Award, 2017

## Scholarships

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- Youlchon AI Star Scholarship, Youlchon Foundation, 2020
- Ph. D. Scholarship, Max Planck Society, 04.2019 - 10.2019
- Electrical Engineering and Computer Science Graduate Student program, Korea Foundation for Advanced Studies, 2014 - 2018
- National Scholarship for Science & Engineering, Korea Student Aid Foundation, 2010 - 2013

## Community Activities

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- Conference Area Chair: ICLR 2024
- Conference Reviewer: CVPR, ICCV, ECCV, WACV, SIGGRAPH, SIGGRAPH Asia, NeurIPS, AAAI, ICLR, ICML
- Journal Reviewer: IEEE TPAMI, TIP, TNNLS, JSTSP, TMM, TCI, SPL. Springer IJCV, TVCJ, Elsevier CVIU
- Workshop Reviewer: NTIRE 2019-2021. AIM 2019-2020, LCI 2021
- Workshop Co-organizer: NTIRE 2019-2021. AIM 2019-2020, AI4CC 2022-2023

## Publications (Selected)

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- NVIDIA: Yuval Atzmon, Maciej Bala, Yogesh Balaji, Tiffany Cai, Yin Cui, Jiaojiao Fan, Yunhao Ge, Siddharth Gururani, Jacob Huffman, Ronald Isaac, Pooya Jannaty, Tero Karras, Grace Lam, J. P. Lewis, Aaron Licata, Yen-Chen Lin, Ming-Yu Liu, Qianli Ma, Arun Mallya, Ashlee Martino-Tarr, Doug Mendez, **Seungjun Nah**, Chris Pruett, Fitsum Reda, Jiaming Song, Ting-Chun Wang, Fangyin Wei, Xiaohui Zeng, Yu Zeng, Qinsheng Zhang, “Edify Image: High-Quality Image Generation with Pixel Space Laplacian Diffusion Models,” arXiv 2024. [arXiv](#)
- Songwei Ge, **Seungjun Nah**, Guilin Liu, Tyler Poon, Andrew Tao, Bryan Catanzaro, David Jacobs, Jia-Bin Huang, Ming-Yu Liu, Yogesh Balaji, “Preserve Your Own Correlation: A Noise Prior for Video Diffusion Models,” ICCV 2023. [PDF](#)
- Yogesh Balaji, **Seungjun Nah**, Xun Huang, Arash Vahdat, Jiaming Song, Qinsheng Zhang, Karsten Kreis, Miika Aittala, Timo Aila, Samuli Laine, Bryan Catanzaro, Tero Karras, and Ming-Yu Liu, “eDiff-I: Text-to-Image Diffusion Models with an Ensemble of Expert Denoisers,” arXiv 2022. [arXiv](#)
- Cheeun Hong, Sungyong Baik, Heewon Kim, **Seungjun Nah**, and Kyoung Mu Lee, “Content-Aware Dynamic Quantization for Image Super-Resolution,” ECCV 2022. [PDF](#)
- Junghun Oh, Heewon Kim, **Seungjun Nah**, Cheeun Hong, Jonghyun Choi, and Kyoung Mu Lee, “Attentive Fine-Grained Structured Sparsity for Image Restoration,” CVPR 2022. [PDF](#)
- **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,” ICLR 2022. [PDF](#)
- Joonkyu Park, **Seungjun Nah**, and Kyoung Mu Lee, “Recurrence-in-Recurrence Networks for Video Deblurring,” BMVC 2021. [PDF](#)
- **Seungjun Nah**, Sanghyun Son, Suyoung Lee, Radu Timofte and Kyoung Mu Lee *et al.*, “NTIRE 2021 Challenge on Image Deblurring,” CVPRW 2021. [PDF](#)
- Sanghyun Son, Jaerin Lee, **Seungjun Nah**, Radu Timofte and Kyoung Mu Lee *et al.*, “AIM 2020 Challenge on Video Temporal Super-Resolution,” ECCVW 2020. [PDF](#)
- **Seungjun Nah**, Sanghyun Son, Radu Timofte and Kyoung Mu Lee *et al.*, “NTIRE 2020 Challenge on Image and Video Deblurring,” CVPRW 2020. [PDF](#)
- **Seungjun Nah**, Sanghyun Son, Radu Timofte and Kyoung Mu Lee *et al.*, “AIM 2019 Challenge on Video Temporal Super-Resolution: Methods and Results,” ICCVW 2019. [PDF](#)
- **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,” CVPRW 2019. [PDF](#)
- **Seungjun Nah**, Sanghyun Son, and Kyoung Mu Lee, “Recurrent Neural Networks with Intra-Frame Iterations for Video Deblurring,” CVPR 2019. [PDF](#)

- Sanghyun Son, **Seungjun Nah**, and Kyoung Mu Lee, “Clustering Convolutional Kernels to Compress Deep Neural Networks,” ECCV 2018. [PDF](#)
- Tae Hyun Kim, **Seungjun Nah**, and Kyoung Mu Lee, “Dynamic Video Deblurring using a Locally Adaptive Linear Blur Model,” IEEE TPAMI, 2018. [PDF](#)
- Bee Lim, Sanghyun Son, Heewon Kim, **Seungjun Nah**, and Kyoung Mu Lee, “Enhanced Deep Residual Networks for Single Image Super-Resolution,” CVPRW 2017. (**Challenge Winner, Workshop Best Paper**) [PDF](#)
- **Seungjun Nah**, Tae Hyun Kim, and Kyoung Mu Lee, “Deep Multi-scale Convolutional Neural Network for Dynamic Scene Deblurring,” CVPR 2017. (**Spotlight**) [PDF](#)

## References

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Ph.D. Advisor   Prof. Kyoung Mu Lee  
Professor at Seoul National University  
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<https://cv.snu.ac.kr>

Collaborator   Prof. Tae Hyun Kim  
Professor at Hanyang University  
taehyunkim@hanyang.ac.kr  
<https://sites.google.com/site/lliger9>