

Seongmin Hong

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I'm a Postdoctoral Researcher in Institute of New Media and Communications, SNU, with interests in recent image/video generative models and their inversion, as well as optimization algorithms and computational imaging systems like MRI and automotive radar.

Education

Ph.D. in Electrical and Computer Engineering – Seoul National University <i>Dissertation:</i> Inversion of Deep Generative Models: Structural and Optimization-based Approaches <i>Award:</i> Distinguished Ph.D. Dissertation Award in Communications and Signal Processing Advisor: Se Young Chun, GPA: 4.08/4.3	03 2020 — 08 2025
B.S. in Electrical and Computer Engineering – Seoul National University GPA: 3.70/4.3	03 2016 — 02 2020
Mathematics and Physics – Gyeonggi Science High School for the Gifted	03 2013 — 02 2016

Experience

Postdoctoral Researcher – Institute of New Media and Communications, SNU	09 2025 — 08 2026
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Publications (selected, sole first author)

[Gradient-free Decoder Inversion in Latent Diffusion Models](#)

Seongmin Hong, Suh Yoon Jeon, Kyeonghyun Lee, Ernest K. Ryu, Se Young Chun
Neural Information Processing Systems (**NeurIPS**), 2024.

[Adaptive Selection of Sampling-Reconstruction in Fourier Compressed Sensing](#)

Seongmin Hong, Jaehyeok Bae, Jongho Lee, Se Young Chun
European Conference on Computer Vision (**ECCV**), 2024.

[On Exact Inversion of DPM-Solvers](#)

Seongmin Hong, Kyeonghyun Lee, Suh Yoon Jeon, Hyewon Bae, Se Young Chun
Conference on Computer Vision and Pattern Recognition (**CVPR**), 2024.

[On the Robustness of Normalizing Flows for Inverse Problems in Imaging](#)

Seongmin Hong, Inbum Park, Se Young Chun
International Conference on Computer Vision (**ICCV**), 2023.

[Neural Diffeomorphic Non-uniform B-spline Flows](#)

Seongmin Hong, Se Young Chun
Thirty-Seventh AAAI Conference on Artificial Intelligence (**AAAI**, oral), 2023.

[Advanced direction of arrival estimation using step-learned iterative soft-thresholding for frequency-modulated continuous wave multiple-input multiple-output radar](#)

Seongmin Hong, Seong-Cheol Kim, Seongwook Lee
IET Radar, Sonar & Navigation, 2023.

[Radar Signal Decomposition in Steering Vector Space for Multi-Target Classification](#)

Seongmin Hong, Seongwook Lee, Byeong-Ho Lee, Jinwook Kim, Yong-Hwa Kim, Seong-Cheol Kim
IEEE Sensors Journal, 2021.

Presentations

[On the Robustness of Normalizing Flows for Inverse Problems in Imaging](#)

In 2024 SIAM Conference on Imaging Science (**SIAM IS24**), Atlanta, Georgia, U.S., May 28-31, 2024

Challenges

[AIM 2024 Depth Upsampling Challenge](#) - 3rd place

Woojae Han, Kyeonghyun Lee, **Seongmin Hong**, Se Young Chun

Teaching Experience

Head TA, Signals and Systems (English Lecture)	03 2022 – 06 2022
Head TA, Seminar in Electrical and Computer Engineering 3	03 2020 – 06 2020
TA, Advanced Electromagnetics 1	03 2020 – 06 2020

Fellowship

Apple Scholars in AI/ML PhD fellowship program (Institutional Nominee)	2025
Qualcomm Innovation Fellowship Korea 2024 (won 4,000,000 KRW)	12 2024
Brain Korea 21 Four Program	03 2020 – Present

Services

Technical Research Personnel in SNU (Alternative military service)	03 2023 – 02 2025
Paper reviewers: NeurIPS (2024, 2025), ICML (2025), ICLR (2025), CVPR (2025), ICCV (2025), AAAI (2026), AISTATS (2025), ACMMM (2025)	
IEEE Sensors Journal, ACM TOMM, IEEE TPAMI	since 2023

Patents

Audio Data Management Device and Method Using A Generative AI Model
Se Young Chun, **Seongmin Hong**, Kyungryeol Lee
Korea Patent Filed, 04 2025

Other Publications

[Uncertainty-Adaptive Selection of Sampling-Reconstruction for Fourier Compressed Sensing](#)
Seongmin Hong, Jaehyeok Bae, Jongho Lee, Se Young Chun
3rd Workshop on Uncertainty Quantification for Computer Vision in ECCV (extended abstract), 2024.

[Target classification based on point cloud data using automotive imaging radar](#)
Sohee Lim, Jaehoon Jung, **Seongmin Hong**, Byeong-ho Lee, Seong-Cheol Kim
KICS Winter Conference (in Korean), 2021.

[Measurement Data Release on 2.4 GHz ISM Band Usage](#)
Doyoung Ham, **Seongmin Hong**, Byonghyo Shim, Seong-Cheol Kim
KICS Winter Conference (in Korean), 2021.

[Analysis of CNN Classifier Performance for Segway Data with 77GHz Automotive Radar](#)
Byeong-ho Lee, **Seongmin Hong**, Jinwook Kim, Seongwook Lee, Byonghyo Sim, Seong-Cheol Kim
KICS Winter Conference (in Korean), 2021.

[Optimization of 16-QAM Constellations with AWGN Channel](#)
Seongmin Hong, Jeong-Hoon Park, Doyoung Ham, Seong-Cheol Kim
KICS Summer Conference (in Korean), 2020.