CURRICULUM VITAE

Sungjoon Choi, Ph.D.
Associate Professor

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Born July 1981, Seoul, Korea
US citizen

EDUCATION

2015	Stanford University, Stanford, CA, USA Ph.D. in Electrical Engineering Dissertation Title: "3D Reconstruction in the Wild" Advisor: Vladlen Koltun
2007	Seoul National University, Seoul, Korea B.S. in Computer Science and Engineering Honor: Summa Cum Laude

EXPERIENCE

2025 – present	Korea University, Seoul, Korea *Associate Professor* Research in computational imaging, computer vision, and machine learning, with emphasis on generative models, efficient image/video processing, and 3D vision
2015 – 2025	Google Research, Mountain View, CA, USA *Staff Software Engineer* Research and engineering in machine perception; contributions to 3D localization and mapping for AR/VR systems, and AI-driven imaging/video methods deployed in Google products, including Google Photos, Pixel, and YouTube Selected research outputs: peer-reviewed publications, patents, and Google AI Blog articles in computational photography, and internal performance-based awards
2008 – 2010	Microsoft Corporation, Redmond, WA, USA *Software Engineer* Systems and protocol engineering for X.400, including RPC protocol design for reliable distributed synchronization Recipient, Microsoft Gold Star Award

GRANTS & AWARDS

2026 – 2027	Outstanding Young Researcher Grant, National Research Foundation of Korea
2015 – 2025	Performance awards and recognitions, Google Research (18 total)
2010 – 2015	Samsung Scholarship, Samsung Foundation of Culture
2010	Microsoft Gold Star Award, Microsoft Corporation
2006	Finalist, ACM International Collegiate Programming Contest World Finals
2002	Finalist, ACM International Collegiate Programming Contest World Finals
1999	First Place, Korea Olympiad in Informatics
1996	First Place, Korea Olympiad in Informatics

TEACHING

2026 Spring	XAI608: Advanced Computer Vision, Instructor, Korea University
2025 Fall	XAI518: Information Theory, Instructor, Korea University
2025 Spring	XAI608: Advanced Computer Vision, Instructor, Korea University
2013 Summer	CS148: Introduction to Computer Graphics and Imaging, TA, Stanford University

TALKS

2015	"3D Reconstruction with a Consumer Depth Camera," Microsoft, Redmond, WA

PUBLICATIONS

Sangwoo Jo and Sungjoon Choi, "Formalizing the Sampling Design Space of Diffusion-Based Generative Models via Adaptive Solvers and Wasserstein-Bounded Timesteps," *Preprint*, 2026. arXiv: 2602.12624.

Mauricio Delbracio and Sungjoon Choi, "Take All Your Pictures to the Cleaners, with Google Photos Noise and Blur Reduction," *Google AI Blog*, 2021.

Mauricio Delbracio, Ignacio Garcia-Dorado, Sungjoon Choi, Damien Kelly, and Peyman Milanfar, "PolyBlur: Removing Mild Blur by Polynomial Reblurring," *IEEE Transactions on Computational Imaging*, vol. 7, pp. 837–848, 2021.

Sungjoon Choi, John Isidoro, Pascal Getreuer, and Peyman Milanfar, "Fast, Trainable, Multiscale Denoising," in *IEEE International Conference on Image Processing (ICIP)*, 2018, pp. 963–967.

Pascal Getreuer, Ignacio Garcia-Dorado, John Isidoro, Sungjoon Choi, Frank Ong, and Peyman Milanfar, "BLADE: Filter Learning for General Purpose Computational Photography," in *IEEE International Conference on Computational Photography (ICCP)*, 2018, pp. 1–11.

Sungjoon Choi, Qian-Yi Zhou, Stephen Miller, and Vladlen Koltun, "A large dataset of object scans," *CoRR*, 2016. arXiv: 1602.02481.

Sungjoon Choi, Qian-Yi Zhou, and Vladlen Koltun, "Robust Reconstruction of Indoor Scenes," in *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2015, pp. 5556–5565.

Jeongkeun Lee, Sung-Ju Lee, Puneet Sharma, and Sungjoon Choi, "Understanding the Effectiveness of a Co-Located Wireless Channel Monitoring Surrogate System," in *IEEE International Conference on Communications (ICC)*, 2010, pp. 1–6.

Nakjung Choi, Sungjoon Choi, Yongho Seok, Taekyoung Kwon, and Yanghee Choi, "A Solicitation-Based IEEE 802.11p MAC Protocol for Roadside to Vehicular Networks," in *Mobile Networking for Vehicular Environments*, 2007, pp. 91–96.

Sungjoon Choi, Nakjung Choi, Yongho Seok, Taekyoung Kwon, and Yanghee Choi, "Leader-Based Rate Adaptive Multicasting for Wireless LANs," in *IEEE Global Telecommunications Conference (GLOBECOM)*, 2007, pp. 3656–3660.

PATENTS

Mauricio Delbracio, Ignacio Garcia-Dorado, Sungjoon Choi, Irene Zhu, Hossein Talebi, and Peyman Milanfar, "Efficient Image-to-Image Deep Architecture," WO 2026015648, 2026.

Mauricio Delbracio, Peyman Milanfar, Hossein Talebi, and Sungjoon Choi, "Image Enhancement Based on Removal of Image Degradations by Learning from Multiple Machine Learning Models," WO 2024058804, 2024.

Hossein Talebi, Sungjoon Choi, Peyman Milanfar, and Mauricio Delbracio, "Machine Learning Model Based Triggering Mechanism for Image Enhancement," WO 2024076611, 2024.

Peyman Milanfar, Feng Yang, and Sungjoon Choi, "Adaptive DCT Sharpener," US 11,178,430, 2021.

Jeongkeun Lee, Sungjoon Choi, Sung-Ju Lee, Puneet Sharma, and Taekyoung Kwon, "Channel Assignment for a Wireless Network," US 8,391,222, 2013.

ADVISING

Hyeonsik Jo, Intern, Korea University, 2026 – present
Research area: quantization for diffusion models

Sangwoo Jo, Ph.D. student, Korea University, 2025 – present
Research area: diffusion models and efficient generative sampling

Jayeon Kang, M.S. student, Korea University, 2025 – present
Research area: image restoration and state-space models

Woohyun Han, Intern, Google Research, 2019
Next position: Google