

Susung Hong

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Education

- 2024– **University of Washington**
Ph.D. in Computer Science & Engineering
Advisors: Steve Seitz, Brian Curless, Ira Kemelmacher-Shlizerman
- 2018–2024 **Korea University**
B.S. in Computer Science & Engineering
GPA: 3.95/4.0 | Military Service: 2020–2021

Publications

- 2024 **Perturb-and-Revise: Flexible 3D Editing with Generative Trajectories**
Susung Hong, Johanna Karras, Ricardo Martin-Brualla, and Ira Kemelmacher-Shlizerman
Preprint
- 2024 **Spatiotemporal Skip Guidance for Enhanced Video Diffusion Sampling**
Junha Hyung*, Kinam Kim*, Susung Hong, Min-Jung Kim, and Jaegul Choo
Preprint
- 2024 **Smoothed Energy Guidance: Guiding Diffusion Models with Reduced Energy Curvature of Attention**
Susung Hong
Advances in Neural Information Processing Systems (NeurIPS)
- 2024 **Effective Rank Analysis and Regularization for Enhanced 3D Gaussian Splatting**
Junha Hyung, Susung Hong, Sungwon Hwang, Jaeseong Lee, Jaegul Choo, and Jin-Hwa Kim
Advances in Neural Information Processing Systems (NeurIPS)
- 2024 **Retrieval-augmented Score Distillation for Text-to-3D Generation**
Junyoung Seo*, Susung Hong*, Wooseok Jang*, Min-Seop Kwak, Hyeonsu Kim, Doyup Lee, and Seungryong Kim
International Conference on Machine Learning (ICML)
- 2024 **Depth-Aware Guidance with Self-Estimated Depth Representations of Diffusion Models**
Gyeongnyeon Kim*, Wooseok Jang*, Gyuseong Lee*, Susung Hong, Junyoung Seo, and Seungryong Kim
Pattern Recognition (PR)
- 2023 **Large Language Models are Frame-level Directors for Zero-shot Text-to-Video Generation**
Susung Hong, Junyoung Seo, Heeseong Shin, Sunghwan Hong, and Seungryong Kim
Short Version: First Workshop on Controllable Video Generation at ICML
- 2023 **Debiasing Scores and Prompts of 2D Diffusion for View-consistent Text-to-3D Generation**
Susung Hong*, Donghoon Ahn*, and Seungryong Kim
Advances in Neural Information Processing Systems (NeurIPS)
- 2023 **Improving Sample Quality of Diffusion Models Using Self-Attention Guidance**
Susung Hong, Gyuseong Lee, Wooseok Jang, and Seungryong Kim
IEEE/CVF International Conference on Computer Vision (ICCV)
- 2022 **Neural Matching Fields: Implicit Representation of Matching Fields for Visual Correspondence**
Sunghwan Hong, Jisu Nam, Seokju Cho, Susung Hong, Sangryul Jeon, Dongbo Min, and Seungryong Kim
Advances in Neural Information Processing Systems (NeurIPS)

Research Experience

2024–	UW GRAIL Graduate Research Assistant (1) Flexible NeRF editing and (2) generative simulation and agents Supervisor: Steve Seitz, Brian Curless, Ira Kemelmacher-Shlizerman
2024	NAVER AI Research Intern (1) Effective rank regularization for 3D Gaussian splatting and (2) generative relighting Mentor: Jin-Hwa Kim
2023	Twelve Labs ML Research Intern (1) Video-language model agents and (2) high-quality dataset Mentor: Minjoon Seo
2022–2023	CVLAB Undergraduate Research Assistant (1) Images, 3D, and video generation, and (2) neural fields Supervisor: Seungryong Kim

Selected Open Source Contributions

2023	huggingface/diffusers ★ 26.2k Significantly contributed to the integration of Self-Attention Guidance (SAG) for high-quality generation.
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Selected Honors and Awards

2024	Graduate Student Conference Presentation Award , University of Washington
2022	National Science and Engineering Scholarship , Korea Student Aid Foundation
2022	Outstanding Paper Award , Signal Processing Joint Conference of IEIE
2021	Innovation Award , SK AI Challenge
2019	Special & 4th Prize , Secure Coding Competition, Ministry of Public Administration and Security
2019	President's List , Korea University
2019	Dean's List , Korea University

Other Experience

2024–	Conference Reviewer , CVPR, NeurIPS, ECCV, ICLR
2024–	Journal Reviewer , Transactions on Image Processing
2023	AI Mentoring , Kyung Hee High School
2021–	Competitions Expert (Highest Rank: 815th) , Kaggle
2020–2021	Cybersecurity and AI Specialist , Republic of Korea Army