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)

2023 **University of Washington**
Exchange Student

Publications

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 **DirecT2V: 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
Working on 4D generative simulation and agents (supervisors: Steve Seitz, Brian Curless, Ira Kemelmacher-Shlizerman)

2024 **NAVER**
AI Research Intern
Gaussian splatting and generative relighting (mentor: Jin-Hwa Kim)

2023 **UW GRAIL**
Undergraduate Research Assistant
Controllable NeRF editing (supervisor: Ira Kemelmacher-Shlizerman)

2023 **Twelve Labs**
ML Research Intern
Video-language models and data (mentor: Minjoon Seo)

2022–2023 **CVLAB**
Undergraduate Research Assistant
Images, 3D, video generation, and 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-fidelity image generation.

2023 **threestudio-project/threestudio ★ 6.3k**
Contributed to utilizing Debiased Score Distillation Sampling (D-SDS) as the base method.

Selected Honors and Awards

2022 **National Science and Engineering Scholarship**, Korea Student Aid Foundation

2022 **Outstanding Paper Award**, Signal Processing Joint Conference of IEIE

2021 **Innovation Award (7,000,000 KRW)**, 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**, TIP

2023 **AI Mentoring**, Kyung Hee High School

2021– **Competitions Expert (Highest Rank: 815th)**, Kaggle

2020–2021 **Cybersecurity and AI Specialist**, Republic of Korea Army