

# 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
- 2018–24 **Korea University**  
B.S. in Computer Science & Engineering  
Honored on Dean's and President's Lists

## 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 **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)*

## Preprints

- 2023      **DirectT2V: Large Language Models are Frame-level Directors for Zero-shot Text-to-Video Generation**  
Susung Hong, Junyoung Seo, Sunghwan Hong, Heeseong Shin, and Seungryong Kim

## Work Experience

- 2024–      **UW GRAIL**  
Research Assistant  
Working on generative AI (supervisors: Steve Seitz, Brian Curless, Ira Kemelmacher-Shlizerman)
- 2024      **NAVER Cloud**  
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  
Generative models and neural fields (supervisor: Seungryong Kim)

## 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      **President's List**, Korea University
- 2019      **Dean's List**, Korea University

## Selected Open Source Contributions

- 2023      **[huggingface/diffusers](#) ★ 25.4k**  
Significantly contributed to the integration of Self-Attention Guidance (SAG) for high-fidelity image generation.
- 2023      **[threestudio-project/threestudio](#) ★ 6.2k**  
Provided descriptions for the usage of Debiased Score Distillation Sampling (D-SDS).

## Other Experience

- 2024–      **Conference Reviewer**, CVPR, NeurIPS, ECCV
- 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