

Seung Wook Kim

Senior Research Scientist, NVIDIA

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DEGREES	<i>Doctor of Philosophy - Machine Learning</i> University of Toronto, Toronto, ON Thesis: Controllable Scene Generation with Neural Networks Advisor: Prof. Sanja Fidler	June 2024
	<i>Master of Science - Machine Learning</i> University of Toronto, Toronto, ON Thesis: Visual Reasoning by Progressive Module Networks Advisor: Prof. Sanja Fidler	January 2019
	<i>Honours Bachelor of Science with High Distinction</i> Computer Science Specialist - Focus in Artificial Intelligence University of Toronto, Toronto, ON Cumulative GPA 3.99/4.00	June 2016
RESEARCH INTERESTS	Generative models, neural content creation, 3D reconstruction and perception, scene understanding, representation learning	
EMPLOYMENT	<i>Senior Research Scientist</i> NVIDIA, Seoul, Republic of Korea	June 2023 - Present
	<i>Research Scientist</i> NVIDIA, Toronto, Canada	January 2020 - May 2023
	<i>Research intern</i> NVIDIA, Toronto, Canada	January 2019 - December 2019
	<i>Research intern</i> SKT-brain., Seoul, South Korea	May 2018 - August 2018
	<i>Research Scientist</i> Lunit Inc., Seoul, South Korea	July 2016 - August 2017
	<i>Part-Time Research Engineer</i> Avenir, Toronto, ON	September 2015 - April 2016
	<i>Software Developer Co-op</i> , Full-Stack Rails developer IBM Canada, Markham, ON	May 2014 - August 2015
JOURNAL PUBLICATIONS	<i>Self-supervised driven consistency training for annotation efficient histopathology image analysis</i> Medical Image Analysis Srinidhi, C., Kim, S.W. , Chen, F., Martel, A.	

CONFERENCE *Diffusion Texture Painting*
PUBLICATIONS SIGGRAPH 2024.

Hu, A., Desai, N., Alhaija, H., **Kim, S.W.**, Shugrina, M.

Align Your Gaussians: Text-to-4D with Dynamic 3D Gaussians and Composed Diffusion Models (Highlight)

Conference on Computer Vision and Pattern Recognition (CVPR) 2024.

Ling, H., **Kim, S.W.**, Torralba, A., Fidler, S., Kreis, K.

EmerDiff: Emerging Pixel-level Semantic Knowledge in Diffusion Models

International Conference on Learning Representations (ICLR) 2024.

Namekata, K., Sabour, A., Fidler, S., **Kim, S.W.**

EmerNeRF: Emergent Spatial-Temporal Scene Decomposition via Self-Supervision

International Conference on Learning Representations (ICLR) 2024.

Yang, J., Ivanovic, B., Litany, O., Weng, X., **Kim, S.W.**, Li, B., Che, T., Xu, D., Fidler, S., Pavone, M., Wang, Y.

WildFusion: Learning 3D-Aware Latent Diffusion Models in View Space

International Conference on Learning Representations (ICLR) 2024.

Schwarz, K., **Kim, S.W.**, Gao, J., Fidler, S., Geiger, A., Kreis, K.

DreamTeacher: Pretraining Image Backbones with Deep Generative Models

International Conference on Computer Vision (ICCV) 2023.

Li, D., Ling, H., Kar, A., Acuna, D., **Kim, S.W.**, Kreis, K., Torralba, A., Fidler, S.

NeuralField-LDM: Scene Generation with Hierarchical Latent Diffusion Models

Conference on Computer Vision and Pattern Recognition (CVPR) 2023.

Kim, S.W., Brown, B., Yin, K., Kreis, K., Schwarz, K., Li, D., Rombach, R., Torralba, A., Fidler, S.

Align your Latents: High-Resolution Video Synthesis with Latent Diffusion Models

Conference on Computer Vision and Pattern Recognition (CVPR) 2023.

Blattmann, A., Rombach, R., Ling, H., Dockhorn, T., **Kim, S.W.**, Fidler, S., Kreis, K.

PolymorphicGAN: Generating Aligned Samples Across Multiple Domains With Learned Morph Maps (Oral)

Conference on Computer Vision and Pattern Recognition (CVPR) 2022.

Kim, S.W., Kreis, K., Li, D., Torralba, A., Fidler, S.

BigDatasetGAN: Synthesizing ImageNet with Pixel-wise Annotations

Conference on Computer Vision and Pattern Recognition (CVPR) 2022.

Li, D., Ling, H., **Kim, S.W.**, Kreis, K., Barriuso, A., Fidler, S., Torralba, A.

EditGAN: High-Precision Semantic Image Editing

Conference on Neural Information Processing Systems (NeurIPS) 2021.

Ling, H., Kreis, K., Li, D., **Kim, S.W.**, Torralba, A., Fidler, S.

DriveGAN: Towards a Controllable High-Quality Neural Simulation (Oral)

Conference on Computer Vision and Pattern Recognition (CVPR) 2021.

Kim, S.W., Philion, J., Torralba, A., Fidler, S.

Variational Amodal Object Completion

Conference on Neural Information Processing Systems (NeurIPS) 2020.
Ling, H., Acuna, D., Kreis, K., **Kim, S.W.**, Fidler, S.

Learning to Simulate Dynamic Environments with GameGAN
Conference on Computer Vision and Pattern Recognition (CVPR) 2020.
Kim, S.W., Zhou, H., Phillion, J., Torralba, A., Fidler, S.

Visual Reasoning by Progressive Module Networks
International Conference on Learning Representations (ICLR) 2019.
Kim, S.W., Tapaswi, M., Fidler, S.

Keep and Learn: Continual Learning by Constraining the Latent Space for Knowledge Preservation in Neural Networks
Medical Image Computing and Computer Assisted Intervention (MICCAI) 2018.
Kim, H.E., **Kim, S.W.**, Lee, J.

WORKSHOP PUBLICATIONS *Cascaded Pyramid Network for 3D Human Pose Estimation Challenge*
European Conference on Computer Vision (ECCV) 2018.
Hong, S., Jung, W., Woo, I., **Kim, S.W.**

Transferring Knowledge To Smaller Network With Class-Distance Loss
International Conference on Learning Representations (ICLR) workshop 2017.
Kim, S.W., Kim, H.E.

Combining word prediction and r-ary Huffman coding for text entry
InterSpeech Speech and Language Processing for Assistive Technologies (SLPAT) 2016.
Kim, S.W., Rudzicz, F.

AWARDS & SCHOLARSHIPS *Principal Janet Paterson Award* 2016
Awarded to the student graduating with the highest grade point average from Innis college, University of Toronto

Dean's List 2013-2016
Recognition of exceptional academic achievement

Samuel Beatty In-Course Award 2014
Awarded to students in the Departments of Mathematics, Physics, Statistics or Computer Science for outstanding academic performance

NSERC USRA 2013
Undergraduate Student Research Awards

University of Toronto In-Course Scholarship 2013
Awarded to students who demonstrate academic merit

Later Life Learning Scholarship 2013
Awarded to students in the Faculty of Arts and Science for outstanding academic performance

AUCC Bunge Canada Scholarship 2011-2013
Awarded for high academic achievement

Governor General's Bronze Medal

2009

Awarded to the student graduating with the highest grade point average from a Canadian high school