Jeong-gi Kwak

Curriculum Vitae

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RESEARCH INTEREST	Computer Vision, Computer Graphics Generative Models (Diffusion models, GANs), 3D Vision		
EDUCATION	Ph.D. , Electrical Engineering Korea University , Seoul, Korea Dissertation : Towards Controllable and Interpretable Gener Advisor: Prof. Hanseok Ko	Mar. 2020 - Feb. 2024 rative Neural Rendering	
	<i>M.Sc.</i> , Electrical Engineering Korea University, Seoul, Korea Dissertation : Auto-Encoder based GAN using Structural Inf Advisor: Prof. Hanseok Ko	Mar. 2018 - Feb. 2020 Formation	
	<i>B.Sc.</i> , Electrical Engineering Korea University, Seoul, Korea	Mar. 2013 - Feb. 2018	
EXPERIENCES	<i>Visiting Student Researcher</i> University of British Columbia (UBC) , Vancouver, Canada Advisor: Prof. Kwang Moo Yi Focusing on Diffusion Models and 3D Computer Vision	Jun. 2023 - Dec. 2023	
PUBLICATIONS	International Conference		
	<i>J. Kwak</i> *, <i>E. Dong</i> *, <i>Y. Jin, H. Ko, S. Mahajan, K.M. Yi</i> , "ViVid-1-to-3: Novel-view Syn- thesis with Video Diffusion Models", <i>IEEE/CVF Conference on Computer Vision and</i> <i>Pattern Recognition (CVPR</i>), 2024		
	Y. Li, G. Kim, J. Kwak, B. Ku, H. Ko, "Towards Multi-domain Face Landmark Detection with Synthetic data from Diffusion model," <i>IEEE International Conference on Acoustics, Speech and Signal Processing</i> (ICASSP), 2024		
	D. Kim, K. Ko, J. Kwak, D. Han, H. Ko, "A Lightweight Dynamic Filter for Keyword Spotting", IEEE International Conference on Aoucstics, Speech and Signal Process- ing Workshop (ICASSPW), 2023		
	D. Kim, J. Kwak, H. Ko, "Efficient dynamic filter for robust and low computational feature extraction", IEEE Spoken Language Technology Workshop (SLT), 2023		
	J. Kwak, Y. Li, D. Yoon, D. Kim, D. Han, H. Ko, "Injecting 3D Perception of Controllable NeRF-GAN into StyleGAN for Editable Portrait Image Synthesis," <i>European Confer-</i> <i>ence on Computer Vision (ECCV)</i> , 2022 2022 ICT Paper Awards sponsored by MSIT Korea		
	J. Kwak, Y. Li, D. Yoon, D. Han, H. Ko "Generate and Edit Your Own Character in a Canonical View", IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshop (CVPRW), AI for Content Creation Workshop, 2022		
	D. Yoon, J. Kwak , Y. Li D. Han, H. Ko, "DIFAI: Diverse Facial Inpainting using StyleGAN Inversion", <i>IEEE International Conference on Image Processing</i> (ICIP), 2022		
	<i>J. Kwak</i> , <i>Y. Jin, Y. Li, D. Yoon, D. Kim, H. Ko</i> , "Adverse Weather Image Translation with Asymmetric and Uncertainty-aware GAN", <i>British Machine Vision Conference (BMVC)</i> , 2021		
	D. Yoon, J Kwak , Y. Li, D. Han, Y. Jin, H. Ko, "Reference Guided Image Inpainting using Facial Attributes", <i>British Machine Vision Conference (BMVC)</i> , 2021		
	Y. Li, Y. Jin, J. Kwak, D. Yoon, D. Han, H. Ko, "Adaptive Content Feature Enhancement		

	GAN for Multimodal Selfie to Anime Translation", <i>British Machine Vision Conference</i> (BMVC), 2021			
	J. Kwak, D. Han, H. Ko, "CAFE-GAN: Arbitrary Face Attribute Editing with Comple- mentary Attention Feature", European Conference on Computer Vision (ECCV), 2020			
	International Journal			
	Y. Li, J. Kwak, B. Ku, H. Ko, "Towards High-fidelity Facial UV Map Generation in world," Pattern Recognition Letters, 2024 (under revision)	<i>B. Ku, H. Ko</i> , "Towards High-fidelity Facial UV Map Generation in Real- n Recognition Letters, 2024 (under revision)		
	<i>J. Kwak</i> , <i>H. Ko</i> , "4D Facial Avatar Reconstruction from Monocular Video via Effand Controllable Neural Radiance Fields", <i>IEEE Access</i> , 2023	ficient		
	<i>J. Kwak</i> , <i>H. Ko</i> , "Unsupervised Generation and Synthesis of Facial Images via an Auto- Encoder based Deep Generative Adversarial Network", <i>Applied Science</i> , 2020			
PROJECTS	Novel-view synthesis with video diffusion models Jun. 2023 - Dec. Lifting 2D Diffusion model to be 3D-aware by combining view-dependent diffusion model Funding : Korea Institute for Advancement of Technology (KIAT), Korea	2023 fusion		
	3D human reconstruction from a single 2D image May. 2021 - Nov.(1) 3D-aware facial image synthesis using NeRF-based GAN and StyleGAN. (2)trollable digital avatar with parametric models (SMPL-X and FLAME) in projectvelopment of digital human avatar for AI assistant"Funding : Deep Machine Labratory (DMLAB), Korea	2023) Con- :: "De-		
	Image-to-Image translation for improving robot perception Apr. 2019 - Dec. 2021 Adverse weather image translation for robust robot perception in project :"Exploring deep learning-based robot perception techniques for navigating outdoor terrains" Funding : Air Force Office of Scientific Research, USA			
	Image augmentation with conditional GANFeb. 2018 - Feb. 2019Synthesizing damaged banknote images via cGAN for data augmentation in project: "Deep learning-based Automatic classification of damaged banknotes in ATM"Funding: Hyosung TNS, Korea			
	Video to Text: TRECVID Video To Text (VTT), 2018, hosted by National Institute of Standards and Technology (NIST)	2018		
ACADEMIC SERVICE	Teaching Assistant (TA) , Korea University Seoul, Korea TA for Signals and Systems KECE313	2020		
	Teaching Assistant (TA) , Korea University Seoul, Korea TA for Engineering Design (Undergraduate Thesis) KECE403	2018		
SKILLS	Programming: Python, C/C++, MATLAB, PyTorch, Tensorflow			
GRANTS & AWARDS	KU International Fellowship Granted 5,000,000 KRW from Korea University	2023		
	Human Resource Development Program for Industrial Innovation (Global) Granted about 30,000,000 KRW stipend for 6-month visiting research abroad from Korea Institute for Advancement of Technology (KIAT)	2023		
	2022 ICT Paper Awards sponsored by MSIT Korea Granted 3,500,000 KRW from ETNews	2022		