Jeong-gi Kwak

Curriculum Vitae *kjk8557@korea.ac.kr*
Last updated July 2025 https://jgkwak95.github.io/

RESEARCH INTEREST
Computer Vision, Computer Graphics
Generative Models (Diffusion models, GANs), 3D Vision

EDUCATION

Ph.D., Electrical Engineering Mar. 2020 - Feb. 2024
Korea University, Seoul, Korea
Dissertation : Towards Controllable and Interpretable Generative Neural Rendering
Advisor: Prof. Hanseok Ko

M.Sc., Electrical Engineering Mar. 2018 - Feb. 2020
Korea University, Seoul, Korea
Dissertation : Auto-Encoder based GAN using Structural Information
Advisor: Prof. Hanseok Ko

B.Sc., Electrical Engineering Mar. 2013 - Feb. 2018
Korea University, Seoul, Korea

EXPERIENCES

Postdoctoral Research Fellow Sep. 2025 -
University of British Columbia (UBC), Vancouver, Canada
Working with Prof. Kwang Moo Yi
Research on 3D computer vision and generative models

Research Scientist Dec. 2024 - Aug. 2025
NXN Labs, Seoul, Korea
Developing image foundation model for fashion imagery

Research Scientist Jan. 2024 - Nov. 2024
Innerverz AI, Seoul, Korea
Developing video diffusion models for content generation

Visiting Student Researcher Jun. 2023 - Dec. 2023
University of British Columbia (UBC), Vancouver, Canada
Advisor: Prof. Kwang Moo Yi
Research on video diffusion models and 3D computer vision

Student Researcher Feb. 2023 - May 2023
Innerverz AI, Seoul, Korea
Developing controllable talking head avatar using Neural Radiance Field

PUBLICATIONS

International Conference

J. Kwak*, E. Dong*, Y. Jin, H. Ko, S. Mahajan, K.M. Yi*, "ViVid-1-to-3: Novel-view Synthesis with Video Diffusion Models", *IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2024,

Hightlight Paper **(Top 10%)**

*Y. Li, G. Kim, **J. Kwak**, B. Ku, H. Ko*, "Towards Multi-domain Face Landmark Detection with Synthetic data from Diffusion model," *IEEE International Conference on Acoustics, Speech and Signal Processing (**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 Processing 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," *European Conference on Computer Vision (**ECCV**)*, 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", *IEEE International Conference on Image Processing (**ICIP**)*, 2022

***J. Kwak**, Y. Jin, Y. Li, D. Yoon, D. Kim, H. Ko*, "Adverse Weather Image Translation with Asymmetric and Uncertainty-aware GAN", *British Machine Vision Conference (**BMVC**)*, 2021

*D. Yoon, **J Kwak**, Y. Li, D. Han, Y. Jin, H. Ko*, "Reference Guided Image Inpainting using Facial Attributes", *British Machine Vision Conference (**BMVC**)*, 2021

*Y. Li, Y. Jin, **J. Kwak**, D. Yoon, D. Han, H. Ko*, "Adaptive Content Feature Enhancement GAN for Multimodal Selfie to Anime Translation", *British Machine Vision Conference* (**BMVC**), 2021

***J. Kwak**, D. Han, H. Ko*, '"CAFE-GAN: Arbitrary Face Attribute Editing with Complementary 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 Real-world," *Pattern Recognition Letters*, 2024

***J. Kwak**, H. Ko*, "4D Facial Avatar Reconstruction from Monocular Video via Efficient and Controllable Neural Radiance Fields", *IEEE Access*, 2023

***J. Kwak**, H. Ko*, "Unsupervised Generation and Synthesis of Facial Images via an Auto-Encoder based Deep Generative Adversarial Network", *Applied Science*, 2020

PROJECTS

Large-scale generative foundation model for fashion imagery Dec. 2024 - present
Research on diffusion transformer-based generative model for fashion and human image synthesis.

Keyframe interpolation with video diffusion models May. 2024 - Nov. 2024
Developed and deployed a keyframe interpolation solution using video diffusion models, automating labor-intensive in-between animation tasks for animation studios.

Animatable and controllable content generation Jan. 2024 - Jul. 2024
Developed video diffusion models for animatable and controllable contents (animatable profile pictures, dance challenges, and talking heads).

Novel-view synthesis with video diffusion models Jun. 2023 - Dec. 2023
Developed single image-based novel-view synthesis algorithm by combining view-conditioned diffusion model and video diffusion model.
Funding : Korea Institute for Advancement of Technology (KIAT), Korea

4D avatar generation using Neural Radiance Field Feb. 2023 - May 2023
Developed controllable neural radiance field for face reenactment.

3D human reconstruction from a single 2D image May. 2021 - Nov. 2023
3D-aware facial image synthesis using NeRF-based GAN and StyleGAN. in project: "Development of digital human avatar for AI assistant"
Funding : Deep Machine Labratory (DMLAB), Korea

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 GAN Feb. 2018 - Feb. 2019
Synthesizing 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

Reviewer (peer-reivew)
CVPR(25,24,22), NeurIPS(25,23), AAAI(25), SIGGRAPH-Asia(25), WACV(26), ECCV(22), ICASSP(23,22,21), CVIU(23)

Teaching Assistant (TA), Korea University | Seoul, Korea 2020
TA for Signals and Systems | KECE313

Teaching Assistant (TA), Korea University | Seoul, Korea 2018
TA for Engineering Design (Undergraduate Thesis) | KECE403

GRANTS & AWARDS

Outstanding Reviewer 2025
Recognized as an Outstanding Reviewer at CVPR 2025 (711/12,593 reviewers)

KU International Fellowship 2023
Granted 5,000,000 KRW from Korea University

Human Resource Development Program for Industrial Innovation (Global) 2023
Granted about 30,000,000 KRW stipend for 6-month visiting research abroad from Korea Institute for Advancement of Technology (KIAT)

2022 ICT Paper Awards sponsored by MSIT Korea 2022
Granted 3,500,000 KRW from ETNews