

Kwanggyoon Seo

Generative AI for image and video synthesis

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Education

KAIST

PhD in Graduate School of Culture Technology

Supervisor: Junyong Noh

Thesis: Portrait Video Manipulation and Synthesis using Pre-trained Generative AI

Sep. 2018 – Aug. 2024

KAIST

Master in Graduate School of Culture Technology

Supervisor: Junyong Noh

Thesis: Interactive Shadow Removal using a cGAN

Sep. 2016 – Aug. 2018

KAIST

BS in Department of Electrical Engineering

Sep. 2011 – Aug. 2016

Work Experience

Visual Media Lab, KAIST

Research Assistant

> Supervisor: Junyong Noh

> Topic: video, image, and face synthesis and manipulation

Jan. 2017 – March. 2024

Republic of Korea

Anigma Technologies

Consulting

> Collaborators: Seonghyun Kim, Kyungmin Cho, Chag Wook Seo

> Topic: GAN-based image generation and manipulation

Jan. 2024 – April. 2024

Republic of Korea

KAI Inc.

Consulting

> Collaborators: Bumki Kim, Seounghwa Jeong

> Topic: 3D Content Generation

Sep. 2022 – Dec. 2022

Republic of Korea

Adobe Research

Research Intern

> Mentors: Seung Wug Oh, Joon-Young Lee, Cynthia Lu

> Topic: GAN-based image editing

Jun. 2022 – Aug. 2022

Remote

Adobe Research

Research Intern

> Mentors: Seung Wug Oh, Joon-Young Lee, Cynthia Lu

> Topic: GAN-based video portrait video editing

Mar. 2021 – Jun. 2021

Remote

Naver Corp

Research Intern

> Mentor: Suntae Kim, Soonmin Bae

> Topic: light-weight video inpainting model

Dec. 2019 – Jun. 2020

Republic of Korea

Research

Local Segment for Mesh-Agnostic Audio-Driven 3D Facial Animation

Sihun Cha, Kwanggyoon Seo, Junyong Noh

In submission

A Deep Learning-based Eye Manipulation System

Seonghyun Kim, Changwook Seo, Kwanggyoon Seo, Seung Han Song, Junyong Noh

In submission

Mesh-Agnostic Audio-driven Facial Animation

Kwanggyoon Seo*, Sihun Cha*, HyeonHo Na, Inyup Lee, Junyong Noh

In submission

Audio2Style: Transferring Latent Motion for Audio-Driven Emotional Talking-Head Generation

Kwanggyoon Seo, Kwan Yun, Sunjin Jung, Junyong Noh

In submission

LM-EDIT: Emotion Manipulation for Talking-head Videos via Facial Landmarks	In submission
<i>Kwanggyoon Seo, Rene Jotham Culaway, ByungUk Lee, Junyong Noh</i>	
Facial Performance Retargeting in the Wild	
<i>Seonghyun Kim, Kwanggyoon Seo, Seoung Wug Oh, Roger Blanco i Ribera, Junyong Noh</i>	
Diffusion-based Sketch Extraction with One Example	arxiv 2024
<i>Kwan Yun*, Youngseo Kim*, Kwanggyoon Seo, Chang Wook Seo, Junyong Noh</i>	
NeRFFaceSpeech: One-shot Audio-driven 3D Talking Head Synthesis via Generative Prior	CVPR Workshop 2024
<i>Gihoon Kim, Kwanggyoon Seo, Sihun Cha, Junyong Noh</i>	
Speed-Aware Audio-Driven Speech Animation using Adaptive Windows	minor revision in TOG
<i>Sunjin Jung, Yeongho Seol, Kwanggyoon Seo, Hyeonho Na, Seonghyeon Kim, Vanessa Tan, Junyong Noh</i>	
Neural-Enhanced Adaptive Live Streaming	TPAMI 2024
<i>Seunghwa Jeong, Bumki Kim, Seunghoon Cha, Kwanggyoon Seo, Hayoung Chang, Jungjin Lee, Younghui Kim, and Junyong Noh</i>	
StyleCineGAN: Landscape Cinemagraph Generation using a Pre-trained StyleGAN	CVPR 2024
<i>Jongwoo Choi, Kwanggyoon Seo, Amirsaman Ashtari, Junyong Noh</i>	
LeGO : Leveraging Surface Deformation Model for Stylized Face Generation with One Data	CVPR 2024
<i>Soyeon Yoon*, Kwan Yun*, Kwanggyoon Seo, Sihun Cha, Jung Eun Yoo, Junyong Noh</i>	
Stylized Face Sketch Extraction via Generative Prior with Limited Data	CGF 2024, EG2024
<i>Kwan Yun*, Kwanggyoon Seo*, Chang Wook Seo*, Soyeon Yoon, Seongcheol Kim, Soohyun Ji, Amirsaman Ashtari, Junyong Noh</i>	
Generating Texture for 3D Human Avatar from a Single Image using Sampling and Refinement Networks	CGF 2023, EG2023
<i>Sihun Cha, Kwanggyoon Seo, Amirsaman Ashtari, Junyong Noh</i>	
StylePortraitVideo: Editing Portrait Videos with Expression Optimization	CGF 2022, PG2022
<i>Kwanggyoon Seo, Seoung Wug Oh, Jingwan Lu, Joon-Young Lee, Seonghyeon Kim, Junyong Noh</i>	
Deep Learning-based Unsupervised Human Facial Retargeting	CGF 2021, PG2021
<i>Seonghyeon Kim, Sunjin Jung, Kwanggyoon Seo, Roger Blanco i Ribera, Junyong Noh</i>	
Virtual Camera Layout Generation using a Reference Video	CHI 2021
<i>Jung Eun Yoo*, Kwanggyoon Seo*, Sanghun Park, Jaedong Kim, Dawon Lee, Junyong Noh</i>	
Overthere: A Simple and Intuitive Object Registration Method for an Absolute Mid-air Pointing Interface	IMWUT 2021
<i>Hyunggoog Seo, Jaedong Kim, Kwanggyoon Seo, Bumki Kim, Junyong Noh</i>	
Neural Crossbreed: Neural Based Image Metamorphosis	SIGGRAPH Asia 2020
<i>Sanghun Park, Kwanggyoon Seo, Junyong Noh</i>	

* denote equal contribution

US Patent

Editing portrait videos	US20240013809A1
Image processing method and apparatus	US20230410249A1
Method of generating cinemagraph based on deep learning	US20230206528A1
Method and device for processing image on basis of artificial neural network	US20220044414A1
Method and apparatus for framing three dimensional target object for virtual camera layout	US11900607
Method and apparatus for assisting object registration in a smart home system	US11887330
Image processing method and apparatus	US11790486

Tech Transfer

eNgin Visual Wave	Method and apparatus for refining 3D texture	2022
MOTIF IMAGENERY	Method for analyzing and generating camera layout	2019
MOTIF IMAGENERY	Method and system for classifying cinematography grammars and and positioning 3D virtual camera	2018

🏆 Awards

- KAIST URP 2022 Grand Prix** Style-based Landscape Cinemagraph Generation
KCGS 2022 Best Poster Award Generating 3D Human Texture from a Single Image with Sampling and Refinement
KCGS 2022 Best Undergraduate Poster Award Style-based Landscape Cinemagraph Generation
KCGS 2021 Best Full Paper Award Deep Learning-Based Lighting Estimation for Indoor and Outdoor

💬 Mentoring Master/Undergrad Thesis

- Stylized Sketch Extraction via Generative Prior with Limited Data** Oct. 2022 - Dec. 2023
Kwan Yun
- Landscape Cinemagraph Generation using a Pre-trained StyleGAN** Jan. 2022 - Dec. 2023
Jongwoo Choi
- Generating Texture for 3D Human Avatar from a Single Image** Jan. 2021 - Dec. 2022
Sihun Cha
- Indoor and Outdoor Light Estimation** Jun. 2020 - Dec. 2020
Jiwon Lee

★ Peer Review

- 2024** CVPR, ECCV, TPAMI, WACV, Visual Computer
2023 CVPR, TPAMI, Pacific Graphics, CASA
2022 ECCV, CGI
2020 Pacific Graphics, CGI
2019 CGI

★ Invited Talk

- Nov. 2023** Soongsil University - GANs for Image Generation and Synthesis