TAEKYUNG KI

Homepage | Google Scholar | GitHub | LinkedIn | E-mail: taekyung.ki@kaist.ac.kr

RESEARCH INTERESTS

I am interested in generative models and their applications in computer vision. My current research focuses on **controllable, interactive, and reliable video generation** toward **the broader goal of video-based world models**. My previous work spans human video generation, including audio-driven avatar generation for video dubbing [C2], diverse real-time controllability [C4], user-interactive head avatar generation [M1], NeRF-based parametric head reenactment [C3], and training-free methods for controllable and reliable sampling in video diffusion models [P1].

EDUCATION

Ph.D. in Artificial Intelligence, KAIST *Sep. 2025 - Present*
- Advisor: Prof. Sung Ju Hwang Seoul, South Korea

M.S. in Mathematics, Yonsei University *Mar. 2019 - Feb. 2021*
- Thesis: Deep Scattering Transform with Max-pooling Seoul, South Korea
- Advisor: Prof. Youngmi Hur

B.S. in Mathematics, Kookmin University *Mar. 2015 - Feb. 2019*
- Ranked 1^{st} in department of mathematics. Seoul, South Korea
- Advisor: Prof. Won-Kwang Park

PUBLICATIONS

*: Equal contribution / †: Corresponding author / C: Conference publication / P: Preprint / U: Under review

[U1] **Avatar Forcing: Real-Time Interactive Head Avatar Generation for Natural Conversation**
Taekyung Ki*, Sangwon Jang*, Jaehyeong Jo, Jaehong Yoon, and Sung Ju Hwang†
Under review 2026

[P1] **Frame Guidance: Training-Free Guidance for Frame-Level Control in Video Diffusion Models**
Sangwon Jang*, Taekyung Ki*, Jaehyeong Jo, Jaehong Yoon, Soo Ye Kim, Zhe Lin, and Sung Ju Hwang†
ArXiv 2025 (Under review)

[C4] **FLOAT: Generative Motion Latent Flow Matching for Audio-driven Talking Portrait**
Taekyung Ki, Dongchan Min, and Gyeongsu Chae
International Conference on Computer Vision (**ICCV**) 2025

[C3] **Learning to Generate Conditional Tri-plane for 3D-aware Expression Controllable Portrait Animation**
Taekyung Ki, Dongchan Min, and Gyeongsu Chae
European Conference on Computer Vision (**ECCV**) 2024

[C2] **StyleLipSync: Style-based Personalized Lip-sync Video Generation**
Taekyung Ki* and Dongchan Min*
International Conference on Computer Vision (**ICCV**) 2023

[C1] **Deep Scattering Network with Max-pooling**
Taekyung Ki and Youngmi Hur†
IEEE Data Compression Conference (**DCC**) 2021

TALKS

Motion Latent Flow Matching for Real-time Audio-driven Talking Portrait *Aug. 2025*
at Pika Labs (Host: Chenlin Meng, CTO) Remote

RESEARCH AND WORKING EXPERIENCE

MLAI Lab at KAIST *Mar. 2025 - Aug. 2025*
Research Associate
- Research on video diffusion models (Advisor: Prof. Sung Ju Hwang)

DeepBrain AI Inc. (Alternative Military Service, South Korea) *Dec. 2023 - Mar. 2025*
Research Scientist
- Developing novel frameworks for human video generation

AITRICS Inc. (Alternative Military Service, South Korea) *Mar. 2022 - Dec. 2023*
Research Scientist
- Working with Prof. Sung Ju Hwang and Prof. Eunho Yang
- Developing novel frameworks for human video generation

JENTI Inc. *Feb. 2021 - Dec. 2021*
Research Engineer
- OCR and NLP-based document analysis

Wavelets and Approximation Lab. at Yonsei University *Aug. 2019 - Feb. 2021*
Graduate Student Researcher (Advisor: Prof. Youngmi Hur)
- Mathematical analysis on deep neural networks

Scientific Computing Lab. at Kookmin University *Mar. 2018 - Feb. 2019*
Undergraduate Student Researcher (Advisor: Prof. Won-Kwang Park)
- Analysis (PDEs)

TEACHING

Teaching Assistant at Yonsei University *Mar. 2019 - Dec. 2020*
Calculus 1-2, Linear algebra, Mathematics and biology, and Engineering mathematics (Vector calculus, Fourier analysis, Linear PDEs and statistics, etc.)

AWARDS AND SCHOLARSHIPS

1st Prize Winner at AI Grand Challenge 2021, Ministry of Science and ICT *Oct. 2021*
BK 21 Scholarship, Department of Mathematics, Yonsei University *Sep. 2020 - Feb. 2021*
Top Honors in Mathematics, Department of Mathematics, Kookmin University *Feb. 2019*
Academic Scholarship, Department of Mathematics, Kookmin University *Sep. 2015 - Feb. 2019*

ACADEMIC SERVICES

Conference Reviewer
Computer Vision and Pattern Recognition (CVPR) *2025 - 2026*
International Conference on Computer Vision (ICCV) *2025*

REFERENCES

Prof. Sung Ju Hwang Associate Professor, Graduate School of AI, KAIST
- E-mail: sungju.hwang@kaist.ac.kr

Prof. Youngmi Hur Full Professor, Department of Mathematics, Yonsei University
- E-mail: yhur@yonsei.ac.kr

Prof. Won-Kwang Park Full Professor, Department of Mathematics, Kookmin University
- E-mail: parkwk@kookmin.ac.kr