

# TAEKYUNG KI

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## RESEARCH INTERESTS

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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 [P1], NeRF-based parametric head reenactment [C3], and training-free methods for controllable and reliable sampling in video diffusion models [C5, P2].

## EDUCATION

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**Ph.D. in Artificial Intelligence, KAIST**

- Advisor: [Prof. Sung Ju Hwang](#)

*Sep. 2025 - Present*

Seoul, South Korea

**M.S. in Mathematics, Yonsei University**

- Thesis: Deep Scattering Transform with Max-pooling

- Advisor: [Prof. Youngmi Hur](#)

*Mar. 2019 - Feb. 2021*

Seoul, South Korea

**B.S. in Mathematics, Kookmin University**

- Ranked 1<sup>st</sup> in department of mathematics.

- Advisor: [Prof. Won-Kwang Park](#)

*Mar. 2015 - Feb. 2019*

Seoul, South Korea

## PUBLICATIONS

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\*: Equal contribution / †: Corresponding author / C: Conference publication / P: Preprint

[P2] **Self-Refining Video Sampling**

Sangwon Jang\*, [Taekyung Ki](#)\*, Jaehyeong Jo\*, Saining Xie, Jaehong Yoon†, and Sung Ju Hwang†

ArXiv 2026 (Under review)

[P1] **Avatar Forcing: Real-Time Interactive Head Avatar Generation for Natural Conversation**

[Taekyung Ki](#)\*, Sangwon Jang\*, Jaehyeong Jo, Jaehong Yoon, and Sung Ju Hwang†

ArXiv 2026 (Under review)

[C5] **Frame Guidance: Training-Free Guidance for Frame-Level Control in Video Diffusion Model**

Sangwon Jang\*, [Taekyung Ki](#)\*, Jaehyeong Jo, Jaehong Yoon, Soo Ye Kim, Zhe Lin, and Sung Ju Hwang†

International Conference on Learning Representations (ICLR) 2026

[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<sup>\*</sup> and Dongchan Min<sup>\*</sup>

International Conference on Computer Vision (ICCV) 2023

[C1] **Deep Scattering Network with Max-pooling**

Taekyung Ki and Youngmi Hur<sup>†</sup>

IEEE Data Compression Conference (DCC) 2021

## TALKS

**Motion Latent Flow Matching for Real-time Audio-driven Talking Portrait**

at [Pika Labs](#) (Host: [Chenlin Meng](#), CTO)

*Aug. 2025*

Remote

## RESEARCH AND WORKING EXPERIENCE

**MLAI Lab at KAIST**

*Research Associate*

*Mar. 2025 - Aug. 2025*

- Research on video diffusion models (Advisor: Prof. Sung Ju Hwang)

**DeepBrain AI Inc.** (Alternative Military Service, South Korea)

*Research Scientist*

*Dec. 2023 - Mar. 2025*

- Developing novel frameworks for human video generation

**AITRICS Inc.** (Alternative Military Service, South Korea)

*Research Scientist*

*Mar. 2022 - Dec. 2023*

- Working with Prof. Sung Ju Hwang and Prof. Eunho Yang

- Developing novel frameworks for human video generation

**JENTI Inc.**

*Research Engineer*

*Feb. 2021 - Dec. 2021*

- OCR and NLP-based document analysis

**Wavelets and Approximation Lab. at Yonsei University**

*Graduate Student Researcher* (Advisor: Prof. Youngmi Hur)

*Aug. 2019 - Feb. 2021*

- Mathematical analysis on deep neural networks

**Scientific Computing Lab. at Kookmin University**

*Undergraduate Student Researcher* (Advisor: Prof. Won-Kwang Park)

*Mar. 2018 - Feb. 2019*

- 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 -*

European Conference on Computer Vision (ECCV)

*2026 -*

## REFERENCES

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**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