# Kim Youwang

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[Website](#) | [Scholar](#) | [Github](#)

## RESEARCH GOAL

**Generate and reconstruct realistic 3D embodiments (e.g., humans, animals, and robots) from limited observations, aiming advancements in virtual simulation and embodied intelligence.**

Interests: 3D Computer Vision, Computer Graphics, Generative Models, Multi-modal Vision & Graphics Applications

## EDUCATION

**Pohang University of Science and Technology, POSTECH**                    Sep. 2020 – Present
*Integrated M.S. & Ph.D., Electrical Engineering (Advisor: Prof. Tae-Hyun Oh)*                    Pohang, Korea

**Pohang University of Science and Technology, POSTECH**                    Mar. 2016 – Aug. 2020
*Bachelor of Science., Major: Electrical Engineering*                    Pohang, Korea

## EXPERIENCE

**Research Scientist Intern**                    Oct. 2024 – Mar. 2025
*Meta Reality Labs - Codec Avatars team (Manager: Chen Cao, Yaser Sheikh)*                    Pittsburgh, PA, US

- Conducted research about photorealistic avatar generation.

**Visiting Researcher**                    Oct. 2023 – Mar. 2024
*Real Virtual Humans group (PI: Gerard Pons-Moll)*                    Tübingen, Germany

- Research collaboration with Gerard Pons-Moll and his group.

**Student Representative**                    Jul. 2021 – Jun. 2022
*Algorithmic Machine Intelligence Lab (AMI Lab) at Dept. of EE*                    POSTECH, Korea

- Served as the student representative of AMI Lab.

**Exchange Student**                    Aug. 2019 – Dec. 2019
*Nanyang Technological University (NTU)*                    Nanyang, Singapore

- Studied as an exchange student at NTU, Singapore for one semester.

**Undergraduate Student Representative**                    Jan. 2018 – Dec. 2018
*Department of Electrical Engineering*                    POSTECH, Korea

- Worked as an undergraduate student representative of Dept. of EE at POSTECH for a year.

**Samsung Electronics Undergraduate Research Internship**                    Jul. 2018 – Aug. 2018
*Air Lab in Network Division*                    Suwon, Korea

- Research on 5G NR base station's Uplink vector-X-check algorithm.

## AWARD & HONOR

**Best Poster Award, BMVC 2024**                    Nov. 2024
*"MeTTA: Single-View to 3D Textured Mesh Reconstruction with Test-Time Adaptation".*

**Excellence Prize, Electronics Times ICT Paper Awards**                    Nov. 2024
*"Feed-Forward Photorealistic Style Transfer for Large-Scale 3D Neural Radiance Field".*

**Best Poster Award, Winner of POSTECH-KAIST joint ML workshop 2024**                    Jul. 2024
*"Paint-it: Text-to-Texture Synthesis via Deep Convolutional Texture Map Optimization and ...".*

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| **Grand Prize (Minister's award, $12K prize), Electronics Times ICT Paper Awards** | Dec. 2023 |

*"CLIP-Actor: Text-Driven Recommendation and Stylization for Generating Virtual Human Avatars".*

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| **Outstanding Reviewer Award, ICCV 2023** | Oct. 2023 |
| **Winner of Qualcomm Innovation Fellowship Korea (QIFK 2022, $4,000 prize)** | Oct. 2022 |

*"CLIP-Actor: Text-Driven Recommendation and Stylization for Animating Human Meshes"*

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| **Selected poster at International Computer Vision Summer School (ICVSS 2022)** | Jul. 2022 |

*"Unified 3D Mesh Recovery of Humans and Animals by Learning Animal Exercise"*

# PUBLICATION (INTERNATIONAL)

(*Equal contribution are denoted by "*".*)

**Abbreviations**

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|---|---|
| TPAMI | *IEEE Trans. on Pattern Analysis and Machine Intelligence* |
| IJCV | *International Journal of Computer Vision* |
| TMLR | *Trans. on Machine Learning Research* |
| CVPR | *IEEE Conf. on Computer Vision and Pattern Recognition* |
| ECCV | *European Conf. on Computer Vision* |
| ICCV | *IEEE Int. Conf. on Computer Vision* |
| ICLR | *International Conference on Learning Representation* |
| AAAI | *AAAI Conference on Artificial Intelligence* |
| BMVC | *British Machine Vision Conference* |

The top CV/AI/ML conferences (CVPR, ECCV, ICCV, NIPS, ICLR) are highly competitive with acceptance rates between 20-30%, and their oral and spotlight papers have acceptance rates of <2% and <9%, respectively.

## Journal

[J4] **Kim Youwang**\*, T. Byun\*, K. Ji-Yeon, S. Choi, T.-H. Oh, "CLIP-Actor-X: Text-driven 4D Human Avatar Generation via Cross-modal Synthesis-through-Optimization," TPAMI, under revision.

[J3] G. Kim, **Kim Youwang**, L. Hyoseok, T.-H. Oh, "FPGS: Feed-Forward Semantic-aware Photorealistic Style Transfer of Large-Scale Gaussian Splatting," *IJCV, under review*.
(Excellence Prize at the Electronics Times ICT Paper Awards 2024.)

[J2] **Kim Youwang**, L. Hyun\*, K. Sung-Bin\*, S.-K. Nam, J.-H. Joo, T.-H. Oh, "A Large-Scale 3D Face Mesh Video Dataset via Neural Re-parameterized Optimization," *TMLR*, 2024.
(Invited to ICLR 2025 as a poster presentation.)

[J1] D. H. Ryou, **Kim Youwang**, T.-H. Oh, "Multi-stage Adaptive Rank Statistic Pruning for Lightweight Human 3D Mesh Recovery Model," *The Visual Computer Journal (TVCJ), Springer*, 2023

## Conference

[C13] A paper on "High-quality 3D avatar generation", *submitted*

[C12] **Kim Youwang**, L. Hyoseok, G. Pons-Moll, T.-H. Oh, "Dress-up: Generating Animatable Clothed 3D Humans via Latent Modeling of 3D Gaussian Texture Maps," *Workshop on Computer Vision for Fashion, Art, and Design (in conj. with ICCV)*, 2025.
(Oral presentation.)

[C11] J. Cho, **Kim Youwang**, H. M. Yang, T.-H. Oh, "Robust 3D Shape Reconstruction in Zero-Shot from a Single Image in the Wild" *CVPR*, 2025.

[C10] **Kim Youwang**, L. Hyun\*, K. Sung-Bin\*, S.-K. Nam, J.-H. Joo, T.-H. Oh, "A Large-Scale 3D Face Mesh Video Dataset via Neural Re-parameterized Optimization," *ICLR*, 2025.
(TMLR 2024 paper, NeuFace, invited as a poster presentation. Top 5.0% TMLR papers in 2 years invited.)

[C9]   K. Yu-Ji, H. Ha, **Kim Youwang**, J. Surh, H. Ha, T.-H. Oh, "MeTTA: Single-View to 3D Textured Mesh Reconstruction with Test-Time Adaptation," *BMVC*, 2024.
(Best Poster Award at BMVC 2024.)

[C8]   **Kim Youwang**, T.-H. Oh, G. Pons-Moll, "Paint-it: Text-to-Texture Synthesis via Deep Convolutional Texture Map Optimization and Physically-Based Rendering," *CVPR*, 2024.
(Best Poster Award at POSTECH-KAIST joint ML workshop 2024. Also, presented in Workshop on AI4CC: AI for Content Creation & in Workshop on AI3DG: AI for 3D Generation, in conjunction with CVPR 2024.)

[C7]   J. Cho, **Kim Youwang**, H. Yang, T.-H. Oh, "ObjectDR: Object-Centric Domain Randomization for 3D Shape Reconstruction in the Wild," *Workshop on Foundation Model (in conj. with CVPR)*, 2024.

[C6]   G. Kim, **Kim Youwang**, T.-H. Oh, "Feed-Forward Photorealistic Style Transfer for Large-Scale 3D Neural Radiance Field," *AAAI*, 2024.

[C5]   **Kim Youwang**, T.-H. Oh, "Text-driven Human Avatar Generation by Neural Re-parameterized Texture Optimization," *Workshop on AI3DCC: AI for 3D Content Creation (in conj. with ICCV)*, 2023.

[C4]   **Kim Youwang**, L. Hyun*, K. Sung-Bin*, S.-K. Nam, J.-H. Joo, T.-H. Oh, "Spatio-Temporally Consistent Face Mesh Reconstruction on Videos," *Workshop on 3DMV: Learning 3D with Multi-View Supervision (in conj. with CVPR)*, 2023.

[C3]   **Kim Youwang**\*, K. Ji-Yeon\*, T.-H. Oh, "CLIP-Actor: Text-Driven Recommendation and Stylization for Animating Human Meshes," *ECCV*, 2022.
(Winner of the Electronics Times ICT Paper Awards 2023, Qualcomm Innovation Award Winner 2022. Also, presented in Workshop on AI4CC: AI for Content Creation, in conjunction with CVPR 2023.)

[C2]   J. Cho, **Kim Youwang**, T.-H. Oh, "Cross-Attention of Disentangled Modalities for 3D Human Mesh Recovery with Transformers" *ECCV*, 2022.
(Featured as a representative trend in the "Weekly ICT Trends" report, Vol. 2086 (2023.04.05) published by Institute for Information & communication Technology Planning & evaluation(IITP), Korea.)

[C1]   **Kim Youwang**, K. Ji-Yeon, K. Joo, T.-H. Oh, "Unified 3D Mesh Recovery of Humans and Animals by Learning Animal Exercise," *BMVC*, 2021. (Accepted poster at ICVSS 2022)

# PATENT

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| Text-driven motion recommendation and neural mesh stylization system ... | US 18/440,889 - Filed |
| Method and apparatus for generating mesh model of human or quadrupeds | KR10-2459293 |
| Method and apparatus for obtaining segmentation of object included in image frame | KR10-2416218 |

# MEDIA COVERAGE

**Dec., 2023. (CLIP-Actor extension)** Featured by Korean Internet news, including Veritas-$\alpha$, etnews, ZUM News, and Daegu News Paper.

**Apr., 2023. (FastMETRO, ECCV 2022, IPIU 2021, IPIU 2022)** Featured as a representative trend in the "Weekly ICT Trends" report, Vol. 2086 (2023.04.05) published by Institute for Information & communication Technology Planning & evaluation(IITP), Korea.

# ACADEMIC SERVICE

**Journal Reviewer**
- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2024, 2025
- ACM TOG/SIGGRAPH ASIA, 2024

- International Journal of Computer Vision (IJCV), 2024, 2025
- Transactions on Machine Learning Research (TMLR), 2025
- IEEE Transactions on Multimedia (TMM), 2023

**Conference Reviewer**
- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2024, 2025
- IEEE/CVF International Conference on Computer Vision (ICCV), 2023, 2025
  (**Outstanding reviewer award 2023**)
- European Conference on Computer Vision (ECCV), 2024
- Conference on Neural Information Processing Systems (NeurIPS), 2024, 2025
- British Machine Vision Conference (BMVC), 2024

# INVITED TALK

Towards Efficient & Realistic Virtual World Communication                    INNERVERZ, Korea, Feb. 2023

# PROJECTS

**Efficient neural radiance fields 3D scene modeling**                    Mar. 2023 – Oct. 2023
- Developing efficient neural radiance fields for reconstructing 3D scenes.
- funded by the LG Display, Korea.

**3D Face Mesh Reconstruction on Videos**                    Mar. 2022 – Jan. 2023
- Developing a multi-view and temporally consistent 3D face reconstruction method for videos.
- funded by the KRAFTON, Korea.

**Optimal Shape Model for Deformable Object Recognition**                    Aug. 2020 – Dec. 2022
- Developed a 3D pose and shape estimation methods for deformable objects in-the-wild.
- funded by the Agency for Defense Development (ADD), Korea.

**Automatic Netlist Generator and Circuit Comparison via Graph Isomorphism**       Sep. 2019 – May. 2020
- Developed an learning-based analogue circuit-to-netlist converter.
- Undergraduate thesis project.

# REFERENCE

**Prof. Tae-Hyun Oh**, Professor, KAIST
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E-mail: thoh.kaist.ac.kr@gmail.com

**Prof. Kyungdon Joo**, Professor, UNIST
Relationship: Collaborator
E-mail: kyungdon@unist.ac.kr