Kim Youwang

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Website | Scholar | Github

RESEARCH GOAL

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

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

EDUCATION

Pohang University of Science and Technology, POSTECH　　Sep. 2020 – Aug. 2026 (Expected)
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

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

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

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

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 ...".

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".

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"

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

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 revision.
(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

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-α, 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
Relationship: M.S. & Ph.D. advisor
E-mail: thoh.kaist.ac.kr@gmail.com

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