Hyun-Bin Oh

Curriculum Vitæ

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Research Interest

TL;DR, Multi-modal learning, especially focusing on modalities with temporal information (*e.g.*, video and audio)

Keywords: Audio-visual learning, Motion understanding and generation, and Physics-inspired, but not limited to.

Experience

Sony AI — Tokyo, Japan
Research Scientist Intern, Deep Generative Modeling Team — *Jul. 2025 – Mar. 2026 (Extended)*

POSTECH → KAIST — Pohang → Daejeon, Korea
Research Assistant (Advisor: Prof. Tae-Hyun Oh) — *Feb. 2022 – Present*

Seoul National University — Seoul, Korea
Research Student Intern (Advisor: Prof. Wonyong Sung & Prof. Chanwoo Kim) — *Aug. 2021 – Dec. 2021*

Seoul National University — Seoul, Korea
Research Student Intern (Advisor: Prof. DongSuk Jeon) — *Dec. 2020 – Feb. 2021*

Education

POSTECH — Pohang, Korea
Joint M.S & Ph.D. in Electrical Engineering (Advisor: Prof. Tae-Hyun Oh) — *Mar. 2022 – Present*

Chung-Ang University — Seoul, Korea
B.S. in Physics & B.E. in Electrical Engineering (Dual Degree); Summa cum laude — *Mar. 2017 – Aug. 2021*

Publications

⟨ International ⟩ (*[P*]: Pre-print, [C*]: Conference, and [J*]: Journal*) ⟩ (*Co-first authors are denoted by "*".*)

[P5] A paper on Spatio-Temporal Audio-Language Modeling.
To be updated

[P4] A paper on Spatial Audio-Visual Large Language Model.
To be updated

[P3] A paper on Audio-visual Haptic Rendering System.
To be updated

[P2] A paper on Physics-based Audio-visual Deepfake Detection.
To be updated

[P1] Revisiting Learning-based Video Motion Magnification for Real-time Processing.
H. Ha*, **Oh Hyun-Bin***, K. Jun-Seong, K. Byung-Ki, K. Sung-Bin, L.-T. Tran, J.-Y. Kim, S.-H. Bae, T.-H. Oh
Under review @ TMLR

[C6] PAVAS: Physics-Aware Video-to-Audio Synthesis.
Oh Hyun-Bin, T. Yuhta, U. Toshimitsu, T.-H. Oh, Y. Mitsufuji
CVPR, 2026 (Oral presentation)
***Work done during an internship at Sony AI**

[C5] Perceptually Accurate 3D Talking Head Generation: New Definitions, Speech-Mesh Representation, and Evaluation Metrics.
C.-Y. Lee*, **Oh Hyun-Bin***, H. EunGi, K. Sung-Bin, S. Nam, T.-H. Oh
CVPR, 2025 (Selected as a highlight paper (< 3.7% acceptance rate) with all strong accept 5,5,5 scores)

[C4] AVHBench: A Cross-Modal Hallucination Benchmark for Audio-Visual Large Language Models.
K. Sung-Bin*, **Oh Hyun-Bin***, J. Lee, A. Senocak, J. Chung and T.-H. Oh

ICLR, 2025

[C3] Learning-based Axial Video Motion Magnification.
K. Byung-Ki, **Oh Hyun-Bin**, K. Jun-Seong, H. Ha, and T.-H. Oh
ECCV, 2024

[C2] Enhancing Speech-Driven 3D Facial Animation with Audio-Visual Guidance from Lip Reading Expert.
H. EunGi*, **Oh Hyun-Bin***, K. Sung-Bin, C. Etcheberry, S. Nam, J. Ju, and T.-H. Oh
INTERSPEECH, 2024

[C1] MultiTalk: Enhancing 3D Talking Head Generation Across Languages with Multilingual Video Dataset.
K. Sung-Bin*, C.-Y. Lee*, G. Son*, **Oh Hyun-Bin**, J. Ju, S. Nam, and T.-H. Oh
INTERSPEECH, 2024

[J1] Uni-DVPS: Unified Model for Depth-Aware Video Panoptic Segmentation.
K. Ji-Yeon, **Oh Hyun-Bin**, K. Byung-Ki, D. Kim, Y. Kwon, and T.-H. Oh
IEEE Robotics and Automation Letters (RA-L), Jul. 2024 (Oral presentation in IROS 2024)
(Best Paper Award on Asian Federation of Computer Vision (AFCV))

Awards & Honors

Best Paper Award, Silver Prize, IPIU, 2025.

Best Paper Award, KRoC, 2024.

Best Paper Award, Encouragement, IPIU, 2023.

Summa Cum Laude, Chung-Ang University, 2021.

Department Honors Scholarship, Chung-Ang University, 2021.

Science Scholarship, Suwon Municipal Scholarship Foundation, 2018.

Department Honors Scholarship, Chung-Ang University, 2017.

Projects

Sound Source Localization for Immersive Car Seat Haptic Feedback Dec. 2024 – Jun. 2025
- Develop a sound localization model with real-time car seat vibration feedback to enhance immersion and enjoyment in video scenarios
- Funded by Hyundai Motor Group

Speech-driven 3D Facial Animation Generation Feb. 2024 – Oct. 2024
- Propose accurate and expressive 3d facial animation models that generate intelligible facial and lip movements
- Funded by KRAFTON
- CVPR 2025, INTERSPEECH 2024, *three papers have been accepted*

Video Panoptic Segmentation and Depth Estimation Mar. 2023 – Dec. 2023
- Propose a multi-task model that can estimate panoptic segmentation and depth in a video context
- Funded by Electronics and Telecommunications Research Institute (ETRI)
- IEEE Robotics and Automation Letters (RA-L) 2024, *published*, Oral presentation in *IROS* 2024

Real-time Video Motion Magnification May. 2022 – May. 2023
- Propose a real-time video motion magnification model that runs real-time on Full-HD videos with high quality
- Funded by Research Institute of Industrial Science and Technology (RIST)
- IPIU 2023, *published*

Patents

Method and Apparatus for Magnifying Axial Motion of Video 2024
- United States, P2024258-02-US (Application)
- Republic of Korea, 10-2024-0140333 (Application)

Extra

Conference Reviewer

- ACCV'24, CVPR'26

Journal Reviewer

- International Journal of Computer Vision (IJCV), Pattern Recognition (PR)

Teaching Experiences

- NAVER Boostcamp AI Tech Computer Vision Track (5th, 6th)
- [EECE454] Introduction to Machine Learning, POSTECH

Deep Learning Seminar

- KAIST AMILab seminar [YouTube]
- POSTECH EE-group deep learning seminar