Yongjun Choi

E-mail | Website | Github | LinkedIn

Research Interest

Computer Vision & Multi-modal Learning

Audio-Visual Learning; Visual Editing; Video Understanding; 3D Scene Understanding
3D Vision and Robotics applications

Education

Ulsan National Institute of Science and Technology (UNIST) Mar. 2024 – Aug. 2026[1]
M.S. in Artificial Intelligence (GPA: 4.03/4.3) *Ulsan, South Korea*
Advisor: Prof. Kyungdon Joo

University Of Seoul Mar. 2018 – Feb. 2024
B.S. in Electrical And Computer Engineering (GPA: 3.98/4.5) *Seoul, South Korea*

Publications

AnyBald: Toward Realistic Diffusion-Based Hair Removal In-The-Wild
Yongjun Choi*, Seungoh Han*, Soomin Kim, Sumin Son, Mohsen Rohani, Edgar Maucourant, Dongbo Min, Kyungdon Joo
*The IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) 2026 · *Equal contribution*

RAC-VAD: Reference-Guided Temporal Alignment and Pairwise Comparison for Video Anomaly Detection in Display Inspection
Yongjun Choi, Gyeongsu Cho, Jinhyeok Kim, Changsu Ha, Sanggyu Biern, Kyungdon Joo
Under Review

Demonstrating a Vision-Based AI Robot for Strategic Board Games
Taehwan Kim*, Dokeun Lee*, Seonghyeon Kim*, Yongjun Choi*, Sungjun Heo, Thi Thuy Ngan Duong, Kyungdon Joo, Namhun Kim, Jeong hwan Jeon, Hyemin Ahn
*Technical Report · *Equal contribution*

[1]Expected graduation date includes a six-month leave of absence for a visiting scholar program at the University of Toronto.

Selected Projects

Realistic Hair Removal and Reconstruction in Images 2025
- Developed a diffusion-based hair removal/reconstruction pipeline for in-the-wild images
- Led model implementation and data pipeline for robust training
- Research project (Collaborated with Modiface)

Smile! Feb. 2025 – Apr. 2025
- Designed and implemented a diffusion-based smile inpainting framework (team lead)
- Final project for University of Toronto MIE 1517 (Introduction to Deep Learning — Prof. Sinisa Colic)

Detecting Anomalies from normal videos 2024
- Built a video anomaly detection system for industrial display inspection
- Led implementation and experiments for the core method
- Industrial project (Funded by Samsung Electronics)

Gomoku AI: Demonstrating a Vision-Based AI Robot for Board Games 2024
- Built a vision-based Gomoku-playing robot system (perception + decision + arm control)
- Implemented the vision module for board/state recognition
- HRI course final project

Lang-Grouping: Object-centric semantic grouping for 3D scenes Apr. 2024 – Jun. 2024
- Designed an object-level language–3D scene understanding framework
- Proposed object-centric contrastive learning for multi-view consistency
- 3D Vision course final project

Citizen-Participatory Urban Forest Platform with Plant Recognition Jun. 2022 – Jun. 2023
- Government-funded project with Korea Forest Service and Seoul Metropolitan Government
- Built data pipeline + trained an MAE-based plant classifier for a Plant Lens application
- Implemented CAM-based visualization for plant classification

Research Experience

Visiting Student Jan. 2025 – Jul. 2025
CARTE, MIE, University of Toronto *Toronto, Canada*
- Selected for University of Toronto AI Convergence Education Program (Funded by IITP, Korea)
- Special MEng student at MIE – completed 4 graduate-level courses with a GPA of 3.95/4.0
- Conducted research project with Modiface (Mentor: Edgar Maucourant and Mohsen Rohani)

Graduate Research Assistant Jan. 2024 – Present
3D Vision and Robotics Lab, UNIST *Ulsan, South Korea*
- Language-guided 3D scene understanding, Video understanding, image manipulation
- Video anomaly detection system for display inspection, working with Samsung Electronics
- Researching on spatial audio augmentation rendering third-person perspective sound (ongoing)

Software Developer Intern Jun. 2023 – Aug. 2023
UPSIGHT Co., Ltd *Seoul, South Korea*
- Contributed to developing a building crack detection model integrated into diagnostic processes
- Participated in the initial development of a landlord–tenant community app using Flutter

Undergraduate Research Internship Feb. 2022 – June. 2023
Computer Vision Lab, University of Seoul *Seoul, South Korea*
- Researched Plant Classification and Class Activation Mapping (CAM)
- Studied deep learning theory & latest related papers

Awards & Honors

3rd Place, Syncathon Season 3 (AI development competition) 2023
Team finSET, served as team leader

3rd Place, Spatial Convergence Big Data Idea Competition 2023
Proposed core concept as part of the team, Hosted by Spatial Informaiton Industry Promotion Institute

3rd Place, Engineering Mathematics Competition, University of Seoul 2021–2023
Awarded for three consecutive years

3rd Place, AWS DeepRacer Competition, BigData Winter Camp 2022
Hosted by Big Data Innovation Convergence

Teaching Experience

Teaching Assistant, UNIST Sep. 2024 – Dec. 2024
Introduction to AI Programming II

Teaching Assistant, UNIST Jul. 2024
Kyungnam Novatus Academia

Skills

Proficient

Languages: Korean (Native), English (Proficient)

Programming: Python

Frameworks & Libraries: PyTorch, Lightning, NumPy, OpenCV, HuggingFace

Tools: Git, Docker, Weights & Biases (W&B), LaTeX

Prior Experience

Programming: C++, Dart, JavaScript, Cuda, Java

Frameworks & Libraries: Flutter, React, FastAPI, Django, JNI

Tools: Figma, Firebase, AWS EC2, Andriod Studio

Patent

- **Method and System for Generating Patchwork Albums by Keyword-Based Cropping and Summarization of Gallery Videos** (2023, KR Patent, pending)

Activities & Service

Google Developer Student Clubs (GDSC), University of Seoul Sep. 2022 – Sep. 2023
Core Member, Data/AI Team

Peer Advocate, University of Seoul Jun. 2022 – Aug. 2022
Exchange student support program operated by the Office of International Affairs

Seoulmate, University of Seoul Sep. 2021 – Dec. 2021
Exchange student support program operated by the Office of International Affairs

Republic of Korea Army Sep. 2019 – Apr. 2021
Sergeant, Signal Communications Battalion (Radio Operator) *Honorably discharged*

Reference

Prof. Kyungdon Joo, Associate professor, UNIST
Relationship: M.S. Advisor
E-mail: kyungdon@unist.ac.kr