Chunghyun Park

Postdoctoral researcher, POSTECH Institute of AI

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Research

3D perception and dexterous manipulation: understanding 3D environments and anticipating the effects of robot actions, with work spanning geometric learning, open-vocabulary and active perception, and world action modeling

Experience

POSTECH Institute of AI | Postdoctoral researcher — Mar. 2026 – Present
3D perception and dexterous manipulation
Advisor: Prof. Minsu Cho · Pohang, Republic of Korea · Mandatory military service through Aug. 2027

NVIDIA | Research collaborator — Mar. 2025 – Feb. 2026
Open-vocabulary 3D instance segmentation: SpaCeFormer (ICML 2026)
Collaborators: Chris Choy and Jan Kautz · Santa Clara, USA (remote)

NVIDIA | Research intern — Dec. 2023 – Feb. 2025
Foundation data and models for 3D segmentation: Mosaic3D (CVPR 2025)
Mentors: Jaesung Choe and Yu-Chiang Frank Wang · Taipei, Taiwan (remote)

Education

Pohang University of Science and Technology (POSTECH)

Ph.D., Artificial Intelligence | Advisor: Prof. Minsu Cho — 2022 – 2026
Dissertation: Learning 3D Visual Perception for Geometric and Semantic Generalization

M.S., Artificial Intelligence | Advisor: Prof. Jaesik Park — 2020 – 2022
Thesis: Fast Point Transformer for Large-scale 3D Scene Understanding

B.S., Mechanical Engineering — 2014 – 2019

Honors

2026 CVPR Doctoral Consortium (24 selected graduates worldwide)
2026 Outstanding Presentation Award, KCCV Doctoral Colloquium
2026 KCCV Doctoral Colloquium (9 selected graduates in South Korea)
2026 Bronze Prize, IPIU Best Paper Award
2025 POSTECHIAN Fellowship (Innovation)
2024 CVPR Outstanding Reviewer (top 2% of 9,872 reviewers)
2023 Grand Prize, BK21 Best Paper Award
2022 Qualcomm Innovation Fellowship
2022 Silver Prize, Samsung HumanTech Paper Award

Talks

2026 *Embodied Vision for Real-World Perception and Action*, KCCV
2026 *Generalizable 3D Perception for Physical AI*, Chung-Ang University
2024 *Equivariant Networks for 3D Vision*, POSTECH CSED703J
2023 *Stable and Consistent Prediction of 3D Characteristic Orientation*, Korea AI Summit

Professional service

Reviewer TPAMI, IJCV; CVPR, ICCV, ECCV, NeurIPS, ICLR

Publications

J: Journal · C: Conference · W: Workshop · P: Preprint

*, †: Equal contribution within each symbol group

P1 **PointWAM: 3D World Action Modeling for Dexterous Robotic Manipulation**
Chunghyun Park*, Beomjun Kim*, Seungcheol Park†, Heeseung Kwon†, Yashu Shukla, Seunghoon Sim, Jinwoo Shin, Minsu Cho
arXiv, 2026

C10 **Distributional Estimation of 3D Object Orientation**
Minjoon Kim, **Chunghyun Park**, Minsu Cho
NeurIPS, 2026

C9 **Affogato: Learning Open-Vocabulary Affordance Grounding with Automatic Data Generation at Scale**
Junha Lee*, Eunha Park*, **Chunghyun Park**, Dahyun Kang, Minsu Cho
ECCV, 2026

C8 **SpaCeFormer: Fast Proposal-Free Open-Vocabulary 3D Instance Segmentation**
Chris Choy, Junha Lee, **Chunghyun Park**, Minsu Cho, Jan Kautz
ICML, 2026

C7 **Affostruction: 3D Affordance Grounding with Generative Reconstruction**
Chunghyun Park, Seunghyeon Lee, Minsu Cho
CVPR, 2026

C6 **Combinative Matching for Geometric Shape Assembly**
Nahyuk Lee*, Juhong Min*, Junhong Lee, **Chunghyun Park**, Minsu Cho
ICCV, 2025 (highlight)

C5 **Mosaic3D: Foundation Dataset and Model for Open-Vocabulary 3D Segmentation**
Junha Lee*, **Chunghyun Park***, Jaesung Choe, Yu-Chiang Frank Wang, Jan Kautz, Minsu Cho, Chris Choy
CVPR, 2025

C4 **Learning SO(3)-Invariant Semantic Correspondence via Local Shape Transform**
Chunghyun Park*, Seungwook Kim*, Jaesik Park, Minsu Cho
CVPR, 2024

C3 **Stable and Consistent Prediction of 3D Characteristic Orientation via Invariant Residual Learning**
Seungwook Kim*, **Chunghyun Park***, Yoonwoo Jeong, Jaesik Park, Minsu Cho
ICML, 2023

W1 **SeLCA: Self-Supervised Learning of Canonical Axis**
Seungwook Kim*, Yoonwoo Jeong*, **Chunghyun Park***, Jaesik Park, Minsu Cho
NeurIPS Workshop on Symmetry and Geometry in Neural Representations, 2022

C2 **PointMixer: MLP-Mixer for Point Cloud Understanding**
Jaesung Choe*, **Chunghyun Park***, Francois Rameau, Jaesik Park, In So Kweon
ECCV, 2022

C1 **Fast Point Transformer**
Chunghyun Park, Yoonwoo Jeong, Minsu Cho, Jaesik Park
CVPR, 2022

J1 **Improved Classification and Localization Approach to Small Bowel Capsule Endoscopy using Convolutional Neural Network**
Yunseob Hwang*, Han Hee Lee*, **Chunghyun Park**, Bayu Adhi Tama, Jin Su Kim, Dae Young Cheung, Woo Chul Chung, Young-Seok Cho, Kang-Moon Lee, Myung-Gyu Choi, Seungchul Lee, Bo-In Lee
Digestive Endoscopy, 2021

Patent

Hardware Apparatus and Method for Predicting Structural Characteristic Orientation of Point Cloud of Structural Object
U.S. Patent Application No. US 2025/0191218 A1, 2025