Jaesik Park

jaesik.park@postech.ac.kr | jaesik.info
Chungam-Ro 77, POSTECH, Pohang-Si, Republic of Korea (37673)

Working Experiences

Associate Professor — Pohang, Republic of Korea
Pohang University of Science and Technology (**POSTECH**) — *Sep. 2022 – Present*

- Co-principal investigator of Computer Vision Lab.
- Advising about 20 masters and Ph.D. students
- Selected as one of the **POSTECH's Representative Research Achievements** (2021)
- Received **Outstanding Online Class award** (2020) and **the Best EduTech award** (2021)
- 3D scene reconstruction, understanding, and assembly projects
- Proposed novel image generation pipelines: **StudioGAN** project (**3.0k GitHub stars**)
- 5.4k Google Scholar citations

Assistant Professor — Pohang, Republic of Korea
Pohang University of Science and Technology (**POSTECH**) — *April. 2019 – Aug. 2022*

Staff Research Scientist — Santa Clara, CA, USA
Intelligent Systems Lab, Intel (Manager: Dr. Vladlen Koltun) — *Dec. 2015 – March 2019*

- **Co-creator of Open3D**: open-sourced 3D vision library that is built from scratch (**7.6+1.1k GitHub stars**)
- Tanks and Temples: an online evaluation system for photogrametry methods
- High quality 3D reconstruction approaches
- Geometry understanding: tangent convolutions and fully convolutional geometric features
- Advised intern students from Stanford University, U.C. Berkeley, and Carnegie Melon University

Post-Doc. Researcher — Daejeon, Republic of Korea
KAIST. Developed color correction algorithms (Mentor: Prof. In So Kweon) — *Aug. 2015 – Nov. 2015*

Research Intern — Redmond, WA, USA
Microsoft Research. Developed a light calibration technique (Mentor: Dr. Sudipta N. Sinha) — *June 2013 – Sep. 2013*

Research Intern — Beijing, China
Microsoft Research Asia. Multiview photometric stereo system (Mentor: Prof. Y. Matsushita) — *April 2012 – Oct. 2012*

Education

Ph.D. and M.S. in Electrical Eng. — Daejeon, Republic of Korea
Korea Advanced Institute of Science and Technology (**KAIST**) — *Feb. 2009 – Aug. 2015*

- Ph.D. thesis: Image-based 3D Modeling via Constrained Optimization (Advisor: Prof. In So Kweon, Co-advisor: Dr. Yu-Wing Tai)
- Master's thesis: Upsampling Low-resolution Image using Heterogeneous High-resolution Image (Advisor: Prof. In So Kweon)

B.E. in Media Communication Eng. — Seoul, Republic of Korea
*Hanyang University (**Summa cum laude**)* — *March. 2005 – Feb. 2009*

Publications

International

[1] Jinoh Cho, Minguk Kang, Vibhav Vineet, and **Jaesik Park**
Context-Aware Image Completion
2210.12350 (arXiv), 2022

[2] Seokjun Ahn, Jungtaek Kim, Minsu Cho, and **Jaesik Park**
Sequential Brick Assembly with Efficient Constraint Satisfaction
2210.01021 (arXiv), 2022

[3] Hyomin Kim, Hyeonseo Nam, Jungeon Kim, **Jaesik Park**, and Seungyong Lee
LaplacianFusion: Detailed 3D Clothed-Human Body Reconstruction
ACM (**SIGGRAPH Asia**), 2022
(Accepted as a journal track paper)

[4] Yoonwoo Jeong*, Seungjoo Shin*, Junha Lee*, Christopher Choy, Animashree Anandkumar, Minsu Cho, and **Jaesik Park**
PeRFception: Perception using Radiance Fields
Conference on Neural Information Processing Systems (**NeurIPS**) Datasets and Benchmarks Track, 2022
(*Equal contribution)

[5] Nayeong Kim, Sehyun Hwang, Sungsoo Ahn, **Jaesik Park**, and Suha Kwak
Learning Debiased Classifier with Biased Committee
Conference on Neural Information Processing Systems (**NeurIPS**), 2022

[6] Seunghyuk Cho, Juyong Lee, **Jaesik Park**, and Dongwoo Kim
A Roatated Hyperbolic Wrapped Normal Distribution for Hierarchical Representation Learning
Conference on Neural Information Processing Systems (**NeurIPS**), 2022

[7] Seungwook Kim, Yoonwoo Jeong, Chunghyun Park, **Jaesik Park**, and Minsu Cho
SeLCA: Self-Supervised Learning of Canonical Axis
Symmetry and Geometry in Neural Representations (NeurReps), **NeurIPS workshop**, 2022

[8] Jiye Kim, Seungbeom Lee, Dongwoo Kim, Sungsoo Ahn, and **Jaesik Park**
Substructure-Atom Cross Attention for Molecular Representation Learning
AI for Science: Progress and Promises (AI4Science) **NeurIPS workshop**, 2022

[9] Kanghee Lee, Junha Lee, and **Jaesik Park**
Learning to Register Unbalanced Point Pairs
2207.04221 (arXiv), 2022

[10] Juyong Lee*, Seokjun Ahn*, and **Jaesik Park**
Style-Agnostic Reinforcement Learning
European Conference on Computer Vision (**ECCV**), 2022
(*Equal contribution)

[11] Jaesung Choe*, Chunghyun Park*, Francois Rameau, **Jaesik Park**, and In So Kweon
PointMixer: MLP-Mixer for Point Cloud Understanding
European Conference on Computer Vision (**ECCV**), 2022
(*Equal contribution)

[12] Jaewon Kam, Jungeon Kim, Soongjin Kim, **Jaesik Park**, and Seungyong Lee
CostDCNet: Cost Volume based Depth Completion for a Single RGB-D Image
European Conference on Computer Vision (**ECCV**), 2022

[13] MinGuk Kang, Joonghyuk Shin, and **Jaesik Park**
StudioGAN: A Taxonomy and Benchmark of GANs for Image Synthesis
2206.09479 (arXiv), 2022

[14] Jinhwi Lee, Jungtaek Kim, Hyunsoo Chung, **Jaesik Park**, and Minsu Cho
Learning to Assemble Geometric Shapes
International Joint Conference on Artificial Intelligence (**IJCAI**), 2022

[15] Hyunmin Lee and **Jaesik Park**
Instance-wise Occlusion and Depth Orders in Natural Scenes
International Conference on Computer Vision and Pattern Recognition (**CVPR**), 2022

[16] Chunghyun Park, Yoonwoo Jeong, Minsu Cho, and **Jaesik Park**
Fast Point Transformer
International Conference on Computer Vision and Pattern Recognition (**CVPR**), 2022

[17] Jaebong Jeong, Janghun Jo, Sunghyun Cho, and **Jaesik Park**
3D Scene Painting via Semantic Image Synthesis
International Conference on Computer Vision and Pattern Recognition (**CVPR**), 2022

[18] Jungeon Kim, Hyomin Kim, Hyeonseo Nam, **Jaesik Park**, and Seungyong Lee
TextureMe: High-quality Textured Scene Reconstruction in Real-time
ACM Transactions on Graphics (**ToG**), 2022
(also presented at **SIGGRAPH2022**)

[19] Jaesung Choe, Byeongin Joung, Francois Rameau, **Jaesik Park**, and In So Kweon
Deep Point Cloud Reconstruction
International Conference on Learning Representations (**ICLR**), 2022

[20] Jae Shin Yoon, Zhixuan Yu, **Jaesik Park**, and Hyun Soo Park
HUMBI: A Large Multiview Dataset of Human Body Expressions and Benchmark Challenge
Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), 2021

[21] Junha Lee, Christopher Choy, and **Jaesik Park**
Putting 3D Spatially Sparse Networks on a Diet
2112.01316 (arXiv), 2021

[22] Wei Dong*, Kwonyoung Ryu*, Michael Kaess, and **Jaesik Park**
Revisiting LiDAR Registration and Reconstruction: A Range Image Perspective
2112.02779 (arXiv), 2021
(*Equal contribution)

[23] Jinsoo Choi, **Jaesik Park**, and In So Kweon
Self-Supervised Real-time Video Stabilization
British Machine Vision Conference (**BMVC**), 2021

[24] Minguk Kang, Woohyeon Shim, Minsu Cho, and **Jaesik Park**
Rebooting ACGAN: Auxiliary Classifier GANs with Stable Training
Conference on Neural Information Processing Systems (**NeurIPS**), 2021

[25] Hyunsoo Chung, Jungtaek Kim, Boris Knyazev, Jinhwi Lee, Graham W. Taylor, **Jaesik Park**, and Minsu Cho
Brick-by-Brick: Combinatorial Construction with Deep Reinforcement Learning
Conference on Neural Information Processing Systems (**NeurIPS**), 2021

[26] Yoonwoo Jeong, Seokjun Ahn, Christopher Choy, Animashree Anandkumar, Minsu Cho, and **Jaesik Park**
Self-Calibrating Neural Radiance Fields
International Conference on Computer Vision (**ICCV**), 2021

[27] Junha Lee, Seungwook Kim, Minsu Cho, and **Jaesik Park**
Deep Hough Voting for Robust Global Registration
International Conference on Computer Vision (**ICCV**), 2021

[28] Hyomin Kim, Jungeon Kim, Jaewon Kam, **Jaesik Park***, and Seungyong Lee*
Deep Virtual Markers for Articulated 3D Shapes
International Conference on Computer Vision (**ICCV**), 2021
(*Joint corrresponding authors, **Oral** Presentation, 3.4% acceptance rate)

[29] Hyunmin Lee and **Jaesik Park**
STAD: Stable Video Depth Estimation
IEEE International Conference on Image Processing (**ICIP**), 2021

[30] Taewon Jin, Taesoo Park, Ina Park, **Jaesik Park***, and Ji Hoon Shim*
Accelerated Crystal Structure Prediction of Multi-elements Random Alloy using Expandable Features
published by Nature Research (**Scientific Reports**), 2021
(*Joint corrresponding authors)

[31] Hyomin Kim, Jungeon Kim, Hyeonseo Nam, **Jaesik Park**, and Seungyong Lee
Spatiotemporal Texture Reconstruction for Dynamic Objects Using a Single RGB-D Camera
42nd Annual Conference of the European Association for Computer Graphics (**EuroGraphics**), 2021

[32] Jinsoo Choi, **Jaesik Park**, and In So Kweon
High-quality Frame Interpolation via Tridirectional Inference
Winter Conference on Applications of Computer Vision (**WACV**), 2021

[33] Minguk Kang and **Jaesik Park**
ContraGAN: Contrastive Learning for Conditional Image Generation
Conference on Neural Information Processing Systems (**NeurIPS**), 2020

[34] Jungtaek Kim, Hyunsoo Chung, Minsu Cho, and **Jaesik Park**
Combinatorial 3D Shape Generation via Sequential Assembly
Machine Learning for Engineering Modeling, Simulation, and Design (ML4Eng), **NeurIPS workshop**, 2020

[35] Jinhwi Lee*, Jungtaek Kim*, Hyunsoo Chung, **Jaesik Park**, and Minsu Cho
Fragment Relation Networks for Geometric Shape Assembly
Learning Meets Combinatorial Algorithms (LMCA), **NeurIPS workshop**, 2020
(*Equal contribution)

[36] Zhixuan Yu, Jaeshin Yoon, Inkyu Lee, Prashanth Venkatesh, **Jaesik Park**, Jihun Yu, and Hyunsoo Park
HUMBI: A Large Multiview Dataset of Human Body Expressions
Conference on Computer Vision and Pattern Recognition (**CVPR**), 2020

[37] Christopher Choy, Junha Lee, Rene Ranftl, **Jaesik Park**, and Vladlen Koltun
High-Dimensional Convolutional Networks for Geometric Pattern Recognition
Conference on Computer Vision and Pattern Recognition (**CVPR**), 2020
(**Oral** Presentation, 5.7% acceptance rate)

[38] Yue Wu, Rongrong Gao, **Jaesik Park**, and Qifeng Chen
Future Video Synthesis with Object Motion Predictions
Conference on Computer Vision and Pattern Recognition (**CVPR**), 2020

[39] Christopher Choy*, **Jaesik Park***, and Vladlen Koltun
Fully Convolutional Geometric Features
International Conference on Computer Vision (**ICCV**), 2019
(*Equal contribution)

[40] Jungeon Kim, Hyomin Kim, **Jaesik Park**, and Seungyong Lee
Global Texture Mapping for Dynamic Objects
Pacific Graphics (**PG**), 2019

[41] Wei Dong, **Jaesik Park**, Yi Yang, and Michael Kaess
GPU Accelerated Robust Scene Reconstruction
IEEE/RSJ International Conference on Intelligent Robots and Systems (**IROS**), 2019

[42] Hae-Gon Jeon, **Jaesik Park**, Gyeongmin Choe, Jinsun Park, Yunsu Bok, Yu-Wing Tai, and In So Kweon
Depth from a Light Field Image with Learning-based Matching Costs
IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), 2019

[43] Maxim Tatarchenko*, **Jaesik Park***, Vladlen Koltun, and Qian-Yi Zhou
Tangent Convolutions for Dense Prediction in 3D
Conference on Computer Vision and Pattern Recognition (**CVPR**), 2018
(*Equal contribution. **Spotlight Oral** Presentation)

[44] Qian-Yi Zhou, **Jaesik Park**, and Vladlen Koltun
Open3D: A Modern Library For 3D Data Processing
1801.09847 (arXiv), 2018

[45] Byungtae Ahn, Dong-Geol Choi, **Jaesik Park**, and In So Kweon
Real-time Head Pose Estimation using Multi-task Deep Neural Network
Robotics and Autonomous Systems (**RAS**), 2018

[46] **Jaesik Park**, Qian-Yi Zhou, and Vladlen Koltun
Colored Point Cloud Registration Revisited
International Conference on Computer Vision (**ICCV**), 2017

[47] Arno Knapitsch, **Jaesik Park**, Qian-Yi Zhou, and Vladlen Koltun
Tanks and Temples: Benchmarking Large-Scale Scene Reconstruction
ACM Transactions on Graphics (**SIGGRAPH**), 2017

[48] Gyeongmin Choe, **Jaesik Park**, Yu-Wing Tai, and In So Kweon
Refining Geometry from Depth Sensors using IR Shading Images
International Journal of Computer Vision (**IJCV**), 2017

[49] Seong heum Kim, Yu Wing Tai, Joon Young Lee, **Jaesik Park**, and In So Kweon
Category Specific Salient View Selection via Deep Convolutional Neural Networks
Computer Graphics Forum (**CGF**), 2017

[50] **Jaesik Park**, Sudipta N. Sinha, Yasuyuki Matsushita, Yu-Wing Tai, and In So Kweon
Robust Multiview Photometric Stereo using Planar Mesh Parameterization
IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), 2016

[51] Qian-Yi Zhou, **Jaesik Park**, and Vladlen Koltun
Fast Global Registration
European Conference on Computer Vision (**ECCV**), 2016
(**Oral** Presentation, 1.8% acceptance rate)

[52] **Jaesik Park**, Yu-Wing Tai, Sudipta N. Sinha, and In So Kweon
Efficient and Robust Color Consistency for Community Photo Collections
Conference on Computer Vision and Pattern Recognition (**CVPR**), 2016

[53] Hyowon Ha, Sunghoon Im, **Jaesik Park**, Hae-Gon Jeon, and In So Kweon
High-quality Depth from Uncalibrated Small Motion Clip
Conference on Computer Vision and Pattern Recognition (**CVPR**), 2016
(**Oral** Presentation, 3.9% acceptance rate)

[54] Inwook Shim, Seunghak Shin, Yunsu Bok, Kyungdon Joo, Dong-Geol Choi, Joon-Young Lee, **Jaesik Park**, Jun Ho Oh, and In So Kweon
Vision System and Depth Processing for DRC-HUBO+
IEEE International Conference on Robotics and Automation (**ICRA**), 2016
(Depth processing algorithm of Team KAIST (winner of DARPA robotics challenge finals 2015))

[55] Seong-Heum Kim, Yu-Wing Tai, **Jaesik Park**, and In So Kweon
Multi-view Object Extraction with Fractional Boundaries
IEEE Transaction on Image Processing (**TIP**), 2016

[56] Hyowon Ha, **Jaesik Park**, and In So Kweon
Dense Depth and Albedo from a Single-shot Structured Light
International Conference on 3D Vision (**3DV**), 2015

[57] Hae-Gon Jeon, **Jaesik Park**, Gyeongmin Choe, Jinsun Park, Yunsu Bok, Yu-Wing Tai, and In So Kweon
Accurate Depth Map Estimation from a Lenslet Light Field Camera
Conference on Computer Vision and Pattern Recognition (**CVPR**), 2015

[58] SoonMin Hwang, **Jaesik Park**, Namil Kim, Yukyung Choi, and In So Kweon
Multi-modal Pedestrian Detection: Benchmark Dataset and Baselines
Conference on Computer Vision and Pattern Recognition (**CVPR**), 2015

[59] **Jaesik Park**, Hyeongwoo Kim, Yu-Wing Tai, Michael S. Brown, and In-So Kweon
High Quality Depth Map Upsampling and Completion for RGB-D Cameras
IEEE Transaction on Image Processing (**TIP**), 2014

[60] Byungtae Ahn, **Jaesik Park**, and In So Kweon
Real-time Head Orientation from a Monocular Camera using Deep Neural Network
Asian Conference on Computer Vision (**ACCV**), 2014

[61] Jinsoo Choi, Byungtae Ahn, **Jaesik Park**, and In So Kweon
GMM-based Saliency Aggregation for Calibration-free Gaze Estimation
International Conference on Image Processing (**ICIP**), 2014

[62] Gyeongmin Choe*, **Jaesik Park***, Yu-Wing Tai, and In So Kweon
Exploiting Shading Cues in Kinect IR Images for Geometry Refinement
Conference on Computer Vision and Pattern Recognition (**CVPR**), 2014
(*Equal contributions. Received 20th **HumanTech Paper Award (Silver Prize)**, Samsung Electronics Corp.)

[63] **Jaesik Park**, Sudipta N. Sinha, Yasuyuki Matsushita, Yu-Wing Tai, and In So Kweon
Calibrating a Non-isotropic Near Point Light Source using a Plane
Conference on Computer Vision and Pattern Recognition (**CVPR**), 2014

[64] **Jaesik Park**, Sudipta N. Sinha, Yasuyuki Matsushita, Yu-Wing Tai, and In So Kweon
Multiview Photometric Stereo using Planar Mesh Parameterization
International Conference on Computer Vision (**ICCV**), 2013
(Received 19th **HumanTech Paper Award (Silver Prize)**, Samsung Electronics Corp.)

[65] **Jaesik Park**, Tae Hyun Oh, Jiyoung Jung, Yu-Wing Tai, and In So Kweon
Tensor Voting Approach for Multi-View 3D Scene-flow Estimation and Refinement
European Conference on Computer Vision (**ECCV**), 2012

[66] **Jaesik Park**, Joon-Young Lee, Yu-Wing Tai, and In So Kweon
Modeling Photo Composition and Its Application to Photo Re-arrangement
International Conference on Image Processing (**ICIP**), 2012

[67] **Jaesik Park**, Yu-Wing Tai, and In-So Kweon
Identigram/Watermark removal using cross-channel correlation
Conference on Computer Vision and Pattern Recognition (**CVPR**), 2012

[68] Jiyoung Jung, Yekeun Jeong, **Jaesik Park**, Hyowon Ha, J. D. Kim, and In-So Kweon
A Novel 2.5D Pattern for Extrinsic Calibration of ToF and Camera Fusion System
IEEE/RSJ International Conference on Intelligent Robots and Systems (**IROS**), 2011

[69] **Jaesik Park***, Hyeongwoo Kim*, Yu-Wing Tai, Michael S. Brown, and In-So Kweon
High Quality Depth Map Upsampling for 3D-TOF Cameras
International Conference on Computer Vision (**ICCV**), 2011
(*Equal contributions)

Domestic

[1] Seokjun Ahn, Jinwhi Lee, Jungtaek Kim, Suhyeon Jeong, Seungwook Kim, **Jaesik Park**, and Minsu Cho
탐색 알고리즘을 활용한 순차적 조각 조립
제 34회 영상처리 및 이해에 관한 워크샵 (IPIU), Feb. 2022

[2] Jaewon Kam, Jungeon Kim, Soongjin Kim, **Jaesik Park**, and Seungyoung Lee
실내 깊이 완성을 위한 3D 합성곱 기반의 절두체 합성곱
제 34회 영상처리 및 이해에 관한 워크샵 (IPIU), Feb. 2022

[3] Wonjun Jin, Soongjin Kim, **Jaesik Park**, Seungyoung Lee, and Sunghyun Cho
GC-NeRF: 형상 제약을 활용한 효율적인 NeRF 학습
제 34회 영상처리 및 이해에 관한 워크샵 (IPIU), Feb. 2022

[4] Junha Lee, Seungwook Kim, Minsu Cho, and **Jaesik Park**
계층적 허프 변환을 통한 포인트 클라우드 정합
제 33회 영상처리 및 이해에 관한 워크샵 (IPIU), Feb. 2021
(**Received The Gold Prize**)

[5] Hyunmin Lee and **Jaesik Park**
일관된 비디오 뎁스 맵 추정을 위한 시간 어텐션 모듈
제 33회 영상처리 및 이해에 관한 워크샵 (IPIU), Feb. 2021
(**Received The Silver Prize**)

[6] Hyunsoo Chung, Jungtaek Kim, Jinhwi Lee, **Jaesik Park**, and Minsu Cho
강화학습을 이용한 그래프 표현 기반의 3차원 물체 생성
제 33회 영상처리 및 이해에 관한 워크샵 (IPIU), Feb. 2021

[7] Jungeon Kim, Hyomin Kim, **Jaesik Park**, and Seungyong Lee
동적 객체에 대한 전역 텍스쳐 맵 생성
제 32회 영상처리 및 이해에 관한 워크샵 (IPIU), Feb. 2020

[8] Jungeon Kim, Hyomin Kim, **Jaesik Park**, and Seungyong Lee
메시 피라미드를 활용한 3차원 비강체 모델 텍스쳐 맵 생성
한국컴퓨터그래픽스학회, July 2019

[9] Min-Hyun Kim, **Jaesik Park**, and In So Kweon
깊이 영상 처리를 위한 학습기반 신뢰도 추정 및 재질 분류
제 27회 영상처리 및 이해에 관한 워크샵 (IPIU), Feb. 2014

[10] Junsik Kim, Kyungdon Joo, Tae-Hyun Oh, **Jaesik Park**, and In So Kweon
시야 공유가 없는 다중 카메라를 이용한 사람 추적
제 27회 영상처리 및 이해에 관한 워크샵 (IPIU), Feb. 2014

[11] SoonMin Hwang, **Jaesik Park**, Namil Kim, Yukyung Choi, and In So Kweon
컬러-열영상 퓨전을 통한 강인한 보행자 검출 기법
제 27회 영상처리 및 이해에 관한 워크샵 (IPIU), Feb. 2014

[12] Hae-Gon Jeon, **Jaesik Park**, Gyeongmin Choe, Jinsun Park, Yunsu Bok, Yu-Wing Tai, and In So Kweon
마이크로 렌즈 기반의 휴대용 라이트필드 카메라를 이용한 정확한 깊이 정보 추정방법
한국멀티미디어학회 춘계학술발표대회, May 2014
(**Received the Best Paper Award**)

[13] Gyeongmin Choe, **Jaesik Park**, Hyowon Ha, and In So Kweon
키넥트 깊이 정밀도 개선을 위한 적외선 패턴 영상의 스테레오 정합
2013년도 한국 멀티미디어 학회 춘계학술 발표대회 논문집 제 16권 1호, May 2013

[14] **Jaesik Park**, Tae Hyun Oh, Jiyoung Jung, Yu-Wing Tai, and In So Kweon
다시점 영상기반 3차원 움직임 추정기법
제 25회 영상처리 및 이해에 관한 워크샵 (IPIU), Feb. 2013

[15] **Jaesik Park**, Yu-Wing Tai, and In So Kweon
컬러 영상의 홀로그램 및 워터마크 제거 기법
제 25회 영상처리 및 이해에 관한 워크샵 (IPIU), Feb. 2013
(**Received the Best Paper Award**)

Program Committee

- **Associate Editor**, International Conference on Robotics and Automation (**ICRA**), 2023
- **Area Chair**, International Conference on Computer Vision and Pattern Recognition (**CVPR**), 2023
- **Area Chair**, European Conference on Computer Vision (**ECCV**), 2022
- **Associate Editor**, IEEE International Conference on Robotics and Automation (**ICRA**), 2022
- Senior Program Committee, American Assoc. for Artificial Intelligence (**AAAI**), 2022
- **Associate Editor**, IEEE/RSJ International Conference on Inteligent Robotics and Systems (**IROS**), 2021
- Area Chair, Machine Vision Applications (MVA) conference, 2021
- **Area Chair**, International Conference on Computer Vision and Pattern Recognition (**CVPR**), 2021
- **Area Chair**, International Conference on Computer Vision (**ICCV**), 2021
- Senior Program Committee, Int. Joint Conf. on Artificial Intelligence (**IJCAI**), 2021
- **Area Chair**, International Conference on Computer Vision and Pattern Recognition (**CVPR**), 2020
- Senior Program Committee, Int. Joint Conf. on Artificial Intelligence (**IJCAI**), 2020
- **Area Chair**, International Conference on Computer Vision (**ICCV**), 2019
- **Session Chair**, International Conference on Computer Vision (**ICCV**), 2019
- Have been served as a reviewer for international conferences, such as **CVPR**, **ICCV**, **ECCV**, **ICLR**, **NeurIPS**, **AAAI**, **ICRA**, **IROS**, **SIGGRAPH**, **SIGGRAPH Asia**, BMVC, 3DV, ACCV, WACV, and so on.
- Have been served as a reviewer for international journals, such as **TPAMI**, **TIP**, **TVCG**, **TRO**, **IJCV**, CVIU, SPL, IVC, Neurocomputing, and so on.

Awards

- **Representative ICT RnD Projects** in Recent Five Years (ICT RnD 사업 성과 중 우수과제), IITP (정보통신기획평가원), Republic of Korea, May 2022
- **CSE Young Scholar**, POSTECH Computer Science Engineering Department, Apr. 2022
- **Google Cloud Platform Credit Award**, Google LLC, USA, March 2022
- **28th HumanTech Paper Award (Silver Prize)**, Samsung Electronics Corp., Feb. 2022
- **Best EduTech Class Award**, POSTECH, *Awarded to the one online class among 480 classes*, Nov. 2021
- **Representative Research Achievements**, POSTECH, July 2021
- **Qualcomm Gift Grant**, Qualcomm Corporation, Dec. 2020
- **The 16th Samsung EM Paper Contest (Silver Prize)**, Samsung Electro-Mechanics, Dec. 2020
- **Outstanding Online Class**, Awarded to five classes among 170 classes, POSTECH, July 2020
- **Faculty Support Program**, Intel Corporation, June 2020
- **Google Season of Docs**, Google Corporation, *Technical writer support for Open3D*, Apr. 2019
- **Qualcomm Gift Grant**, Qualcomm Corporation, Sep. 2019
- Research Velocity Challenge Award, Intel Corporation, Dec. 2018
- Depth Estimation Challenge: Robustness Champion, CVPR workshop on Light Fields for Comp. Vis., July 2017
- **Qualcomm Innovation Award**, Qualcomm Korea Corp., March 2016
- CVPR 2015 Doctoral Consortium, IEEE CVPR, Apr. 2016
- **Honor Prize**, KAIST, *Annual Ph.D. Research Progress Evaluation*, May 2016
- Best Paper Award, Korea Multimedia Society, *2015 Spring Annual Conference*, May 2016
- **Honor Prize**, KAIST, *Annual Ph.D. Research Progress Evaluation*, May 2015
- **20th HumanTech Paper Award (Silver Prize)**, Samsung Electronics Corp., Feb. 2014
- **19th HumanTech Paper Award (Silver Prize)**, Samsung Electronics Corp., Feb. 2013
- Best Paper Award, 25th Workshop on Image Processing and Image Understanding (IPIU2013), Feb. 2013
- Bronze Prize, Samsung Techwin research center conference, Feb. 2012
- Excellent Intern Award, Microsoft Research Asia, Dec. 2012
- **Microsoft Research Asia Fellowship**, Microsoft, *Awarded to 11 Ph.D. students in the top Asian universities.*, Nov. 2011
- **Summa Cum Laude**, Hanyang University, *GPA 4.31/4.5*, Feb. 2009
- **Full Scholarship**, Jeong-Su Scholarship Foundation, Aug. 2006
- **Scholarship for Undergraduate Students**, The Korea Foundation for Advanced Studies (KFAS), June 2006
- **Full scholarship**, Hanyang University, Aug. 2005

Patents

- 대조 학습과 적대적 생성 신경망을 활용한 이미지 생성 및 편집 방법과 장치, Republic of Korea
- Tangent Convolutions for 3D Data, US10572770B2, (Application granted)
- 깊이 정보 획득 장치 및 깊이 정보 획득 방법 (Depth Map Acquisition Device And Depth Map Acquisition Method), Patent No. 1018520850000, Republic of Korea, (Application granted)
- 삼차원 영상 정보 획득 방법 및 이를 구현한 컴퓨팅 장치 (Method For Acquiring Three Dimensional Image Information, And Computing Device Implementing The Same Method), Patent No. 1017652570000, Republic of Korea (Application granted)
- 전경 추출 방법 및 장치 (Foreground Area Extracting Method and Apparatus), Patent No. 10-2015-0084331, Republic of Korea.
- 다중 객체 추적 방법 및 이를 위한 장치 (Method Of Tracking Multiple Objects And Apparatus For The Same), Patent No. 10-2015-0070569, Republic of Korea
- 깊이 센서와 적외선 음영 영상을 이용한 고품질 3차원 정보 획득 장치 및 방법 (Device and method for obtaining accurate 3D information using depth sensor and infrared shading cues), Patent No. 1017079390000, Republic of Korea. (Application granted)
- 가려짐이 있는 환경에서 이동표적의 위치를 추정하는 방법 (Method for Estimating Location of Moving Target in Occluded Tracking Environment), Patent No. 1012883880000, Republic of Korea. (Application granted)
- 컬러 이미지의 채널간 상관관계를 이용하는 워터마크 제거 방법 (Method for removing watermark using cross-channel correlation of color image), Patent No. 1013952840000, Republic of Korea. (Application granted)

Teaching

- AIGS101 Artifical Intelligence Basis II, Fall, 2021
- CSED703F Topics in AI: 3D Vision, Fall, 2021
- AIGS101 Artifical Intelligence Basis I, Spring, 2021
- CSED538/AIGS538 Deep learning, **Awarded as the Best EduTech Class** by POSTECH, Spring, 2021
- AIGS101, Artifical Intelligence Basis II, Fall, 2020
- CSED100, Introduction to Computer Science Engineering, Fall, 2020
- CSED703F, 3D Vision, Fall, 2020
- CSED800/AIGS800, CSE/GSAI Colloquium, Fall, 2020
- AIGS101, Artifical Intelligence Basis I, Spring, 2020
- AIGS537/CSED537, Artificial Intelligence and Data Science Spring, Spring, 2020
- CSED233, Data Structure, **Awarded as the Outstanding Online Class** by POSTECH, Spring, 2020
- CSED703F-01 3D Vision, Fall, 2019

Funding

- *Efficient Neural Radiance Field*, Samsung Advanced Institute of Technology, 2022.12-2023.11 (Planned)
- *3D Perception for Intelligent Robots*, LG Electronics, 2022.06-2022.12
- *Multi-layered Visual Common Sense*, IITP (정보통신기획평가원), Republic of Korea, 2022.04-2026.12
- *3D reconstruction system*, Osstem Implant, Republic of Korea, 2022.07-2023.06
- *Discovering Visual Common Sense*, Qualcomm, USA, 2022.03-2023.03
- *High-fidelity 3D Reconstruction*, Intel Corp., USA, 2022.03-2023.03
- *Google Cloud Platform Credit Award*, Google LLC, USA, 2022.03-current
- *과학기술정보통신부, 인공지능혁신허브 연구개발*, Ministry of Science and ICT, Republic of Korea, 2021.09-current

- *High-quality 3D reconstruction*, Osstem Implant, Republic of Korea, 2021.07-2021.12
- *문화체육관광부, 포스텍-한예종 문화기술선도대학원*, Ministry of Culture, Sports and Tourism, Republic of Korea, 2021.06-2023.12
- *Camera localization*, Samsung Electronics Corp., 2021.05-2022.05
- *과학기술정보통신부, 시각적 상식에 기반한 영상 인페인팅*, Ministry of Science and ICT, Republic of Korea, 2021.05-2024.05
- *LiDAR data augmentation*, Hyundai Motor Group, 2021.03-2021.09
- *InstaOrder dataset collection*, Select Star, Republic of Korea, 2021.03-2021.11
- *Team Open3D. Contributed Nearest Neighbor Module*, Intel Corp., USA, 2020.04-2022.02
- *3D content creation*, Microsoft Reserach Asia, People's Republic of China, 2020.06-2021.06
- *3D human capturing system*, ETRI, Republic of Korea, 2020.03-2020.10
- *과학기술정보통신부 신진연구자 지원사업 + 신진연구 최초혁신실험실*, Ministry of Science and ICT, Republic of Korea, 2020.03-2023.03
- *과학기술정보통신부, 인공지능대학원 지원사업 (POSTECH)*, Ministry of Science and ICT, Republic of Korea, 2020.02-current
- *Geometric perception from videos and images*, Qualcomm Corp., USA, 2019.10-2021.10
- *포항공과대학교 신임교수 초기정착비*, POSTECH, Republic of Korea, 2019.04-2022.02

Talks

- *3D Vison and Open3D*, Seoul National University, Seoul, Republic of Korea (hybrid), Oct. 2022
- *Fast Point Transformer*, Harvard University, Boston, MA, USA (online), June 2022
- *Self-Calibrating Neural Radiance Fields*, Seoul National University, Seoul, Republic of Korea (online), Feb. 2022
- *Self-Calibrating Neural Radiance Fields*, DGIST, Daegu, Republic of Korea, Aug. 2021
- *Object Detection from Images or Point Clouds*, LG Electronics, Seoul, Republic of Korea, Aug. 2021
- *Self-Calibrating Neural Radiance Fields*, Korea Institute of Science and Technology (KIST), Virtual, June 2021
- *Mentor Session: How to Become a Professor*, Conference on Computer Vision and Pattern Recognition (CVPR 2021), Virtual, June 2021
- *Recent Work on Image Generation*, Gwangju Institute of Science and Technology (GIST), Virtual, May 2021
- *Point Cloud Registration using Hierachical Hough Transform*, 33rd Workshop on Image Processing and Image Understanding (IPIU2021), Virtual, Feb. 2021
- *3D Representations and Detections*, Chungbuk University, Virtual, Jan. 2021
- *Introduction to Computer Vision*, Kyungbuk Science High School, Pohang, Republic of Korea, Aug. 2020
- *High-Dimensional Convolutional Networks for Geometric Pattern Recognition*, KCCV 2020, Seoul, Republic of Korea, Aug. 2020
- *Object Detection from Images or Point Clouds*, LG Electronics, Seoul, Republic of Korea, Aug. 2020
- *Geometric Pattern Recognition*, 32nd Workshop on Image Processing and Image Understanding (IPIU2020), Feb. 2020
- *Fully Convolutional Geometric Features*, Koh Young Technology, Yongin, Republic of Korea, Dec. 2019
- *Open3D Tutorial and Fully Convolutional Geometric Features*, Korea Electronics Technology Institute, Seongnam, Republic of Korea, Nov. 2019
- *Introduction to Computer Vision and Deep Learning*, Daegu Science High School, Daegu, Republic of Korea, Aug. 2019

- *3D Computer Vision and Open3D*, International Conference on Machine Vision Applications, Tokyo, Japan, May 2019
- *3D Computer Vision and Open3D*, Qualcomm Head Quater, San Diego, USA, June 2019
- *3D reconstruction using Open3D*, Minneapolis, University of Minnesota, invited lecture for Multiview 3D Geometry in Computer Vision (CSCI 5980) Class, Apr. 2018
- *3D reconstruction using Open3D*, Forma Technology (a startup company at Bay Area), San Francisco, USA, March 2018

Reference

- Up on request.