

Jaesik Park

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Chungam-Ro 77, POSTECH, Pohang-Si, Republic of Korea (37673)

WORKING EXPERIENCES

Assistant Professor

Pohang, Republic of Korea

Pohang University of Science and Technology (POSTECH)

April. 2019 – 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 (2.5k GitHub stars)
- 4.3k Google Scholar citations

Staff Research Scientist

Santa Clara, CA, USA

Intelligent Systems Lab, Intel (Manager: Dr. Vladlen Koltun)

Dec. 2015 – March 2019

- **Co-founder of Open3D**: open-sourced 3D vision library, built from scratch (6.4k GitHub stars)
- Tanks and Temples: an online evaluation system for photogrammetry 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 Mellon 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. Sudepta 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] Hyunmin Lee and **Jaesik Park**
Instance-wise Occlusion and Depth Orders in Natural Scenes
International Conference on Computer Vision and Pattern Recognition (**CVPR**), 2022
- [2] Chunghyun Park, Yoonwoo Jeong, Minsu Cho, and **Jaesik Park**
Fast Point Transformer
International Conference on Computer Vision and Pattern Recognition (**CVPR**), 2022
- [3] 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

- [4] 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
(will be presented at **SIGGRAPH2022**)
- [5] Jaesung Choe, Byeongin Joung, Francois Rameau, **Jaesik Park**, and In So Kweon
Deep Point Cloud Reconstruction
International Conference on Learning Representations (**ICLR**), 2022
- [6] 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
- [7] Junha Lee, Christopher Choy, and **Jaesik Park**
Putting 3D Spatially Sparse Networks on a Diet
2112.01316 (arXiv), 2021
- [8] Jaesung Choe*, Chunghyun Park*, Francois Rameau, **Jaesik Park**, and In So Kweon
PointMixer: MLP-Mixer for Point Cloud Understanding
2111.11187 (arXiv), 2021
(*Equal contribution)
- [9] Wei Dong*, Kwonyoung Ryu*, Michael Kaess, and **Jaesik Park**
Real-time Registration and Reconstruction with Cylindrical LiDAR Images
2112.02779 (arXiv), 2021
(*Equal contribution)
- [10] Jinsoo Choi, **Jaesik Park**, and In So Kweon
Self-Supervised Real-time Video Stabilization
British Machine Vision Conference (**BMVC**), 2021
- [11] 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
- [12] 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
- [13] 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
- [14] Junha Lee, Seungwook Kim, Minsu Cho, and **Jaesik Park**
Deep Hough Voting for Robust Global Registration
International Conference on Computer Vision (**ICCV**), 2021
- [15] 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 corresponding authors, **Oral** Presentation, 3.4% acceptance rate)
- [16] Hyunmin Lee and **Jaesik Park**
STAD: Stable Video Depth Estimation
IEEE International Conference on Image Processing (**ICIP**), 2021
- [17] 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 corresponding authors)
- [18] 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

- [19] Jinsoo Choi, **Jaesik Park**, and In So Kweon
High-quality Frame Interpolation via Tridirectional Inference
Winter Conference on Applications of Computer Vision (**WACV**), 2021
- [20] Minguk Kang and **Jaesik Park**
ContraGAN: Contrastive Learning for Conditional Image Generation
Conference on Neural Information Processing Systems (**NeurIPS**), 2020
- [21] 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
- [22] 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)
- [23] 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
- [24] 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)
- [25] 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
- [26] Christopher Choy*, **Jaesik Park***, and Vladlen Koltun
Fully Convolutional Geometric Features
International Conference on Computer Vision (**ICCV**), 2019
(*Equal contribution)
- [27] Jungeon Kim, Hyomin Kim, **Jaesik Park**, and Seungyong Lee
Global Texture Mapping for Dynamic Objects
Pacific Graphics (**PG**), 2019
- [28] 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
- [29] 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
- [30] 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)
- [31] Qian-Yi Zhou, **Jaesik Park**, and Vladlen Koltun
Open3D: A Modern Library For 3D Data Processing
1801.09847 (arXiv), 2018
- [32] 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
- [33] **Jaesik Park**, Qian-Yi Zhou, and Vladlen Koltun
Colored Point Cloud Registration Revisited
International Conference on Computer Vision (**ICCV**), 2017

- [34] Arno Knapitsch, **Jaesik Park**, Qian-Yi Zhou, and Vladlen Koltun
Tanks and Temples: Benchmarking Large-Scale Scene Reconstruction
ACM Transactions on Graphics (**SIGGRAPH**), 2017
- [35] 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
- [36] 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
- [37] **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
- [38] Qian-Yi Zhou, **Jaesik Park**, and Vladlen Koltun
Fast Global Registration
European Conference on Computer Vision (**ECCV**), 2016
(**Oral** Presentation, 1.8% acceptance rate)
- [39] **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
- [40] 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)
- [41] 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))
- [42] 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
- [43] 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
- [44] 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
- [45] 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
- [46] **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
- [47] 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
- [48] 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

- [49] 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.)
- [50] **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
- [51] **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.)
- [52] **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
- [53] **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
- [54] **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
- [55] 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
- [56] **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 템스 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 텍스처 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 텍스처 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

- **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 Intelligent 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

- **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
- **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 4.32/4.5*, 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 Artificial Intelligence Basis II, Fall, 2021
- CSDE703F Topics in AI: 3D Vision, Fall, 2021
- AIGS101 Artificial Intelligence Basis I, Spring, 2021
- CSDE538/AIGS538 Deep learning, **Awarded as the Best EduTech Class** by POSTECH, Spring, 2021
- AIGS101, Artificial Intelligence Basis II, Fall, 2020
- CSDE100, Introduction to Computer Science Engineering, Fall, 2020
- CSDE703F, 3D Vision, Fall, 2020
- CSDE800/AIGS800, CSE/GSAI Colloquium, Fall, 2020
- AIGS101, Artificial Intelligence Basis I, Spring, 2020
- AIGS537/CSDE537, Artificial Intelligence and Data Science Spring, Spring, 2020
- CSDE233, Data Structure, **Awarded as the Outstanding Online Class** by POSTECH, Spring, 2020
- CSDE703F-01 3D Vision, Fall, 2019

FUNDING

- *3D reconstruction system*, Osstem Implant, Republic of Korea, 2022.03-2022.07
- *Visual common sense (planned)*, 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-한예중 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 Research 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 최초 혁신실험실*, 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 신입교수 초기정착비*, POSTECH, Republic of Korea, 2019.04-2022.02

TALKS

- *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 Hierarchical 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.