

시각 지능 연구실

Visual Artificial
Intelligence Laboratory



전해곤

교수

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Education

- 2018** Ph.D. in School of Electrical Engineering, KAIST
- 2013** M.S. in School of Electrical Engineering, KAIST
- 2011** B.S. in Electrical & Electronic Engineering, Yonsei University

Experience

- 2022 ~** Associate Professor, AI Graduate School, GIST
- 2019 ~ 2022** Assistant Professor, AI Graduate School, GIST
- 2018 ~ 2019** Post-doctoral researcher, The Robotics Institute of Carnegie Mellon University (Pittsburgh, PA, US)
- 2018** Post-doctoral researcher, KEPCO-KAIST AI Research Center
- 2017** Research Intern, Samsung Research America (Dallas, TX, US)
- 2013 ~ 2015** Researcher, P3DigiCar Center in KAIST

Awards and Honors

- 2024** Area Chair, CVPR 2024
- 2022** The College Outstanding Teaching Award, GIST
- 2020** Outstanding research achievement of GIST
- 2018** Best Ph.D. Thesis Award, KAIST
- 2017** Depth Estimation Challenge: Robustness Champion, CVPR 2017 workshop on Light Field for Computer Vision
- 2016** Silver Prize, Samsung Human Tech Paper Award

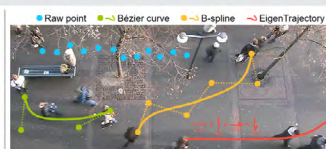
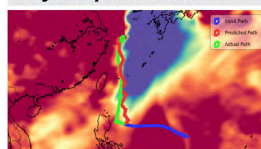
연구실 소개

시각 지능 연구실은 영상 정보를 이용하여 자율주행, 로봇틱스, 영상 개선, 가상/증강 현실(AR/VR)응용을 위한 정보를 추론하는 연구를 수행한다. 세부 연구 분야는 다음과 같다.

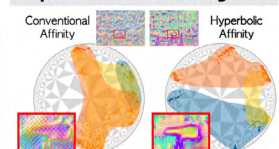
- 3차원 복원 (Stereo Matching, Multiview-stereo, Camera localization)
- 영상 개선 (Image noise removal, super-resolution)
- 자율주행 응용 (Trajectory prediction, Navigation)
- 머신 러닝을 이용한 새로운 컴퓨터 비전 어플리케이션
- AI for Social Good

OUR Research Area

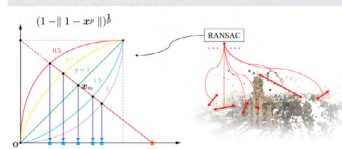
Trajectory Prediction



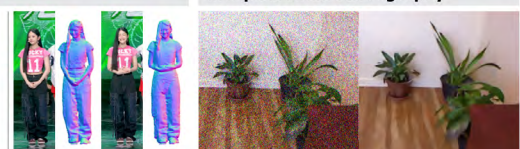
Representation Learning



3D Reconstruction



Computational Photography



연구 성과

주요논문 (대표실적)

- Long-Term Typhoon Trajectory Prediction: A Physics-Conditioned Approach Without Reanalysis Data, ICLR 2024
- Geometry-Aware Projective Mapping for Unbounded Neural Radiance Fields, ICLR 2024
- EigenTrajectory: Low-Rank Descriptors for Multi-Modal Trajectory Forecasting, ICCV 2023
- Learning Affinity with Hyperbolic Representation for Spatial Propagation, ICML 2023
- High-fidelity 3D Human Digitization from Single 2K Resolution Images, CVPR 2023
- A Large-scale Virtual Dataset and Egocentric Localization for Disaster Responses, TPAMI 2023
- Task-specific Scene Structure Representations, AAAI 2023
- A Set of Control Points Conditioned Pedestrian Trajectory Prediction, AAAI 2023
- Learning Depth from Focus in the Wild, ECCV 2022
- Learning Pedestrian Group Representations for Multi-modal Trajectory Prediction, ECCV 2022
- Non-Probability Sampling Network for Stochastic Human Trajectory Prediction, IEEE CVPR 2022
- CMSNet: Deep Color and Monochrome Stereo, IJCV 2022
- DevianceNet: Learning to Predict Deviance from A Large-scale Geo-tagged Dataset, AAAI 2022

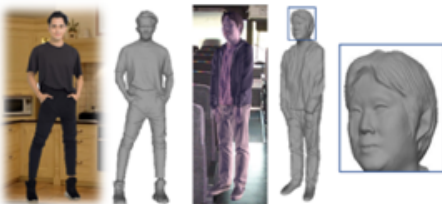
주요 수상실적

- High-fidelity 3D Human Digitization from Single 2K Resolution Images, 2023년 휴먼테크 은상 수상
- Disentangled Multi-Relational Graph Convolutional Network for Pedestrian Trajectory Prediction, 2021년 휴먼테크 동상 수상

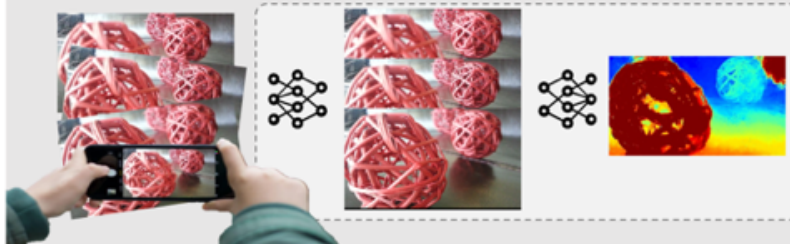
G.I.S.T. AI for X 융합연구

- 3차원 정보를 이용한 가상/증강현실 기술 응용
- 시각 인지 기술과 3차원 기술을 이용한 자율주행차량 탑재 알고리즘 개발
- 스마트폰과 같은 모바일 기기를 위한 컴퓨터 비전 및 인공지능 시스템
- 사회과학 기반 공익을 위한 인공지능 알고리즘 설계

Metaverse



Computational Photography



Autonomous Driving



AI for Social Good

8-year-old boy killed by stray bullet in Manila shooting incident
 JAN 28, 2020 9:54 AM PHT
 JO GUTINGA

Gunmen storms a nightclub in north-east Brazil, killing at least 14 people

