Jaeseok (Jason) Jeong

Visual Intelligence Lab @ Korea Advanced Institute of Technology (KAIST) (VILab)
N7-4 Mechanical Engineering Bldg 5123, Daehak Rd 291, Yuseong District, Daejeon, South Korea
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PRINCIPAL INTERESTS

Computer Vision, Geometric Vision, Omnidirectional Cameras, Event Cameras, Dual-Pixel Cameras, Vision-based Depth Estimation, Single Camera Depth Estimation

ACADEMIC BACKGROUND

Ph.D. Mechanical Engineering — Aug 2020 - Exp. Feb 2025
KAIST, Daejeon, South Korea

- Focus Areas: Computer Vision, Dual-Pixel Sensor, Single Camera Depth Estimation

M.S. Mechanical Engineering — Aug 2018- Aug 2020
KAIST, Daejeon, South Korea

- Focus areas: Computer Vision.

B.S. Mechanical Engineering — Aug 2014- May 2018
University of Illinois at Urbana-Champaign, Champaign, IL

- Minor in Computer Science

EMPLOYMENT HISTORY

Graduate Researcher — 2018 - Present
KAIST, VILab, Daejeon, South Korea

- Senior Member and Current Lab Manager of VILab
- Project Lead/Manager for Several Govt./Industry-funded Projects
- Research on *Depth Estimation using Dual-Pixel Camera*

Undegraduate Research Assistant — Spring 2017 - Winter 2017
UIUC, Dynamic Robotics Lab, Champaign, IL

- Designed Test benches for testing portions of quadrupedal robot
- Assisted graduate student by improving assembly processes and testing processes through critical input
- When assigned with unfamiliar tasks, reached out to available resources to become adept at the given task

Undegraduate Research Assistant — Summer 2016 - Spring 2017
UIUC, John Rogers Research Group, Champaign, IL

- Fast paced research group that required strict deadlines regarding progress
- Worked remotely with a graduate student on an ongoing project regarding manufacturing of MEMS device
- Cooperated with graduate student on project by adding critical insight as to improve manufacturing process

Course Assistant — Spring 2016
TAM212 Dynamics Course, UIUC, Champaign, IL

- Fast paced research group that required strict deadlines regarding progress
- Worked remotely with a graduate student on an ongoing project regarding manufacturing of MEMS device

- Cooperated with graduate student on project by adding critical insight as to improve manufacturing process

Publications (International)

SCI Journal

4. Han, J. K., Kang, M., **Jeong, J.**, Cho, I., Yu, J. M., Yoon, K. J., ... Choi, Y. K. (2022). Artificial Olfactory Neuron for an In-Sensor Neuromorphic Nose. Advanced Science, 2106017.
3. Kang, M., Cho, I., Park, J., **Jeong, J.**, Lee, K., Lee, B., ... Park, I. (2022). High Accuracy Real-Time Multi-Gas Identification by a Batch-Uniform Gas Sensor Array and Deep Learning Algorithm. ACS sensors.
2. Cho, Hoonhee, **Jaeseok Jeong**, and Kuk-Jin Yoon. "EOMVS: Event-Based Omnidirectional Multi-View Stereo." *IEEE Robotics and Automation Letters* (2021)
1. Lee, Yeonkun, **Jaeseok Jeong**, Jongseob Yun, Wonjun Cho, and Kuk-Jin Yoon. "SpherePHD: Applying CNNs on 360° Images with Non-Euclidean Spherical PolyHeDron Representation." *IEEE Transactions on Pattern Analysis and Machine Intelligence* (2020).

Conference

1. Lee, Yeonkun*, **Jaeseok Jeong***, Jongseob Yun*, Wonjun Cho, and Kuk-Jin Yoon. "SpherePHD: Applying CNNs on a Spherical PolyHeDron Representation of 360° Images" *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition* (2019).

Patents

Domestic

2. 권혁준, **정재석**, 박휘성, 윤국진, "다시점 영상 스티칭을 위한 색 보정 방법, 영상 합성 방법, 영상 처리 장치, 저장 매체 및 컴퓨터 프로그램," KR 등록번호 10-2021-0167053
1. 이연건, **정재석**, 윤종섭, 조원준, 윤국진, "전방향 영상의 딥러닝을 이용한 물체 감지 방법 및 장치, 그리고 이를 이용한 차량 자율 주행 방법 및 드론 자율 주행 방법," KR 등록번호 10-2020-0048643

Awards

2. 1st Place in the Event-Only Track in DSEC Challenge: A Stereo Event Camera Dataset for Driving Scenario, CVPRW 2021 Event-Based Vision
1. IPIU 2019 우수논문상 금상: 정20면체 기반 360도 이미지 표현 및 CNN 적용 방법

Research Projects

6. Intelligent AutoFocus Technology using Dual-Pixel Sensor: Samsung Electronics DS, 09/2021 - 09/2022
5. Learning-based Metallic Surface Grade Classification: Samsung Heavy Industries, 09/2021 - 12/2021
4. Perception for Collision Avoidance and Accident Prevention in Autonomous Naval System: KSOE, 09/2021 - 02/2022
3. Development of Quadruped Robot for Surveillance, Reconnaissance, and Search Missions: ADD, 12/2019 – 11/2021
2. Development of Mobile Ground Station for Unmanned Swarm Cyber Physical System (CPS): ADD, 11/2019 – 03/2021
1. AAVM Pedestrian Detection: Hyundai Construction Equipment, 02/2019 – 12/2019