Jaehoon Choi

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EDUCATION

University of Maryland, College Park

- Ph.D. in Computer Science — Jan 2021 – Present

Korea Advanced Institute of Technology (KAIST)

- M.S. in Electrical Engineering — Sep 2017 – Dec 2019
  - Adviser: Prof. Changick Kim

Korea Advanced Institute of Technology (KAIST)

- B.S. in Electrical Engineering — Feb 2011 – Aug 2017
  - Minor: Business and Technology Management
  - Korean Augmentation to the United States Army (mandatory military service) — Oct 2014 – Jul 2016

RESEARCH INTERESTS

Computer Vision, Machine Learning, and Robotics.

PUBLICATIONS

INTERNATIONAL CONFERENCES

[1] **Jaehoon Choi***, Dongki Jung*, Yonghan Lee, Deokhwa Kim, Dinesh Manocha, and Donghwan Lee, "SelfTune: Metrically Scaled Monocular Depth Estimation through Self-Supervised Learning", Accepted to *The IEEE International Conference on Robotics and Automation (**ICRA**)*, 2022. (* These two authors contributed equally)

[2] Taekyung Kim, **Jaehoon Choi**, Seokeon Choi, Dongki Jung, and Changick Kim, "Just a Few Points are All You Need for Multi-view Stereo: A Novel Semi-supervised Learning Method for Multi-view Stereo", *International Conference on Computer Vision (**ICCV**)*, 2021.

[3] Dongki Jung*, **Jaehoon Choi***, Yonghan Lee, Deokhwa Kim, Changick Kim, Dinesh Manocha, and Donghwan Lee, "DnD: Dense Depth Estimation in Crowded Indoor Dynamic Scenes", *International Conference on Computer Vision (**ICCV**)*, 2021. (* These two authors contributed equally)

[4] **Jaehoon Choi**, Dongki Jung, Yonghan Lee, Deokhwa Kim, Dinesh Manocha, and Donghwan Lee, "SelfDeco: Self-Supervised Monocular Depth Completion in Challenging Indoor Environments", *The IEEE International Conference on Robotics and Automation (**ICRA**)*, 2021.

[5] **Jaehoon Choi***, Dongki Jung*, Donghwan Lee, and Changick Kim, "SAFENet: Self-Supervised Monocular Depth Estimation with Semantic-Aware Feature Extraction", *Neural Information Processing Systems Workshop (**NeurIPSW**) on Machine Learning for Autonomous Driving*, Vancouver, Canada, 2020. (* These two authors contributed equally)

[6] Dongki Jung, Seunghan Yang, **Jaehoon Choi**, and Changick Kim, "Arbitrary Style Transfer Using Graph Instance Normalization", *The 27th IEEE International Conference on Image Processing (**ICIP**)*, Abu Dhabi, UAE, 2020

[7] **Jaehoon Choi**, Taekyung Kim, and Changick Kim, "Self-Ensembling with GAN-based Data Augmentation for Domain Adaptation in Semantic Segmentation", *International Conference on Computer Vision (**ICCV**)*, Seoul, South Korea, 2019

[8] Seunghyeon Kim, **Jaehoon Choi**, Taekyung Kim, and Changick Kim, "Self-Training with Adversarial Background Regularization for Unsupervised Domain Adaptive One-Stage Object Detection", *International Conference on Computer Vision (**ICCV**)*, Seoul, South Korea, 2019 (**Oral**)

[9] **Jaehoon Choi**, Minki Jeong, Taekyung Kim, and Changick Kim, "Pseudo-Labeling Curriculum for Unsupervised Domain Adaptation", *British Machine Vision Conference (**BMVC**)*, Cardiff, UK, 2019

OTHER PUBLICATIONS

[1] **Jaehoon Choi**, Daeyeong Kim, Dongwon Yang, Junhee Lee, Dokyung Kim, Changick Kim, "Channel Pruning Scaling Factor of Batch Normalization in Compact Networks", *Journal of the Institute of Electronics and Information Engineers*, vol. 56, No. 3, Mar 2019.

PROFESSIONAL EXPERIENCE

- **Research Internship** at NAVER LABS — Jun 2021 – Aug 2021
  - Manager: *Ph.D. Donghwan Lee*

- Developed a SLAM algorithm for the mobile robot.

■ **Research Internship** at NAVER LABS Jan 2020 – Dec 2020
- Manager: *Ph.D. Donghwan Lee*
- Developed a depth estimation algorithm for robotics systems.

PROJECT EXPERIENCE

■ 3D Object Recognition Algorithm for Autonomous Driving May 2019 – Nov 2019
- Funded by ***LG Electronics Co., Ltd***
- Aimed at Developing the 2D object detection and depth estimation for stereo RGB images and FIR images.

■ Deep Learning Algorithm on Embedded Systems for Vision Tasks Jan 2018 – Dec 2018
- Funded by ***LIG Nex1 Co., Ltd***
- Developed the visual recognition algorithm on the embedded system, which requires light and efficient deep learning.

■ Deep Learning-based Defect Detection Apr 2017 – Dec 2017
- Funded by ***Samsung Electronics Co., Ltd***
- Aimed at developing the automatic surface defect detection algorithm for mobile phone based on deep learning.

TEACHING

■ University of Maryland College Park, Teaching Assistant Sep 2021 – Dec 2021
- CMSC250 – Discrete Structure

■ University of Maryland College Park, Teaching Assistant Feb 2021 – May 2021
- CMSC426 – Computer Vision

■ KAIST, Teaching Assistant Mar 2019 – Jul 2019
- EE838 – Special Topics in Image Engineering <Optimization for Computer Vision>

■ KAIST, Student Tutor Mar 2017 – Jul 2017
- Student tutor for foreign students: CS101 – Introduction to Programming

ACADEMIC ACTIVITIES

■ Conference Reviewer
- CVPR 2020, WACV 2021, ACCV 2020, AAAI 2021, ICRA 2021, CVPR 2021, AAAI 2022
- Chosen as one of 66 outstanding reviewers of ACCV 2020

OTHER ACTIVITIES

■ Large-scale 3D Shape Reconstruction and Segmentation from Shapenet Core55 Aug 2017 – Oct 2017
- Participated in the 3D shape segmentation from ShapeNet challenge held in ICCV 2017.

■ Korean Augmentation to the United States Army Oct 2014 – Jul 2016
- Served in the 6-52 Air Defense Artillery in U.S.Army as a translator (mandatory military duty).

LANGUAGES

■ Korean: Native language.

■ English: Fluent (speaking, reading, writing).

SKILLS

Python, MATLAB, C, C++, ROS, Docker, LaTeX, PyTorch, TensorFlow, Caffe.

REFERENCES

■ **Donghwan Lee**
Computer Vision Team Leader @ NAVER LABS
8 Gumi-ro, Gumi 1(il)-dong, Bundang-gu, Seongnam-si, Gyeonggi-do, Korea
donghwan.lee@naverlabs.com

■ **Professor Changick Kim**
Professor in School of Electrical Engineering,
Korea Advanced Institute of Science and Technology (KAIST)
changick@kaist.ac.kr

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