Jaehoon **Cho**

PH.D. CANDIDATE · YONSEI UNIVERSITY

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Summary

Research Interest Machine Learning, Computer vision, Image processing

Current Focus Monocular Depth Estimation, Deep-learning-based Image Processing, particularly Single Image De-raining

Education

Yonsei University — *Seoul, S.Korea*

PH.D. CANDIDATE IN SCHOOL OF ELECTRICAL AND ELECTRONIC ENGINEERING — *Mar. 2016 - Present*

Korea Aerospace University — *Goyang, Gyeonggi, Korea*

B.S. IN ELECTRONIC ENGINEERING AND AVIONICS — *Mar. 2010 - Feb. 2016*

Publication

International Journal

"Single Image Deraining using Time-laspe data"

JAEHOON CHO, SEUNGRYONG KIM, DONGBO MIN, AND KWANGHOON SOHN — *Jun. 2020*

- IEEE Trans. on Image Processing (TIP), vol. 29, pp. 7274-7289, **(Impact factor: 9.340)**

"Pyramid Inter-Attention for High Dynamic Range Imaging"

SUNGIL CHOI, **JAEHOON CHO**, WONIL SONG, JIHWAN CHOE, JISUNG YOO, AND KWANGHOON SOHN — *Jun. 2020*

- Sensors, vol. 20, pp. 5102, **(Impact factor: 3.031)**

"Deep Monocular Depth Estimation Leveraging a Large-scale Outdoor Stereo Dataset"

JAEHOON CHO, DONGBO MIN, YOUNGJUNG KIM, AND KWANGHOON SOHN — *Mar. 2021*

- Expert Systems With Applications **(Impact factor: 5.452)**
- Project page: http://dimlrgbd.github.io

"Memory-guided Image Deraining using Time-laspe data"

JAEHOON CHO, SEUNGRYONG KIM, AND KWANGHOON SOHN — *Aug. 2021*

- IEEE Trans. on Image Processing (TIP), **(Submitted)**

International Conference

"Multi-task Self-supervised Visual Representation Learning for Monocular Road Segmentation"

JAEHOON CHO, YOUNGJUNG KIM, HYUNGJOO JUNG, CHANGJAE OH, JAESUNG YOUN, AND KWANGHOON SOHN — *July. 2018*

- IEEE Conference on Multimedia and Expo (ICME), **(Oral, acceptance rate 15%)**

"Wide and Narrow: Video Prediction from Context and Motion"

JAEHOON CHO, JIYOUNG LEE, CHANGJAE OH, WONIL SONG, AND KWANGHOON SOHN — *Mar. 2021*

- 2021 The British Machine Vision Conference (BMVC), **(submitted)**

Patent

"Deep learning-based methods and devices for noise image removal"

JAEHOON CHO AND KWANGHOON SOHN — *Mar. 2020*

Korea patent, 10-2095444

"Deep self-supervised learning technique and device for road detection."

JAEHOON CHO AND KWANGHOON SOHN — *Mar. 2020*

Korea patent, 10-2097869

Technical Report

"DIML/CVL RGB-D Dataset: 2M RGB-D Images of Natural Indoor and Outdoor Scenes"

Jaehoon Cho, Youngjung Kim, and Dongbo Min *Jun. 2018*

- Uploaded at : https://jhcho90.github.io/files/technical_report.pdf

Research Experiences

Deep Identification and Tracking of Missing Person in Heterogeneous CCTV *Seoul, S.Korea*

FUNDED BY INSTITUTE OF INFORMATION & COMMUNICATION TECHNOLOGY *Sep. 2017 – Present*

- Development of video prediction for anomaly detection.

Depth Estimation and Image Quality Improvement using Multi-camera / Multi-frame Images *Seoul, S.Korea*

FUNDED BY SAMSUNG *Jul. 2019 – Oct. 2020*

- Development of AI-inspired High Dynamic Range (HDR) imaging of dynamic scenes.
- Development of tele-wide stereo matching.

Fundamental Study of Vision Algorithms for Comprehensive and Through Understanding of Videos *Seoul, S.Korea*

FUNDED BY MINISTRY OF SCIENCE, ICT AND FUTURE PLANNING *Sep. 2017 – Present*

- Developed an algorithm for understanding untrimmed videos.
- Development of next frame prediction.

Development of SWIR / LWIR Image Fusion algorithm *Seoul, S.Korea*

FUNDED BY LIG Nex1 *Mar. 2017 – Nov. 2018*

- Development of image restoration algorithm for outdoor images degraded by adverse weather.
- Construct a large-scale time-lapse real-world database.

Development of the High-Precision AR & VR Contents Based on Smart-Car Sensors *Seoul, S.Korea*

FUNDED BY INSTITUTE OF INFORMATION & COMMUNICATION TECHNOLOGY *Jan. 2017 – Dec. 2017*

- Developed an algorithm for dense stereo matching in outdoor environments.

High Quality 2D-to-Multiview Contents Generation from Large-Scale RGB+D Database *Seoul, S.Korea*

Funded by Institute of Information & Communication Technology **(IITP)** *Sep. 2016 – Aug. 2017*

- Construct a large-scale RGB+D database.
- Developed deep network for inferring high-quality depth from a single 2-D image.
- Developed deep network for confidence measurement.
- Developed deep network for road detection and free space algorithm via depth map.

Yonsei University, Dept. of Electrical and Electronic Engineering *Seoul, S.Korea*

TEACHING ASSISTANT *Sep. 2018 – Dec. 2018*

- Digital image processing, EEE5320.

Skills

Programming Python, C/C++, MATLAB, OpenCV, OpenGL, LaTeX, Linux
Deep learning PyTorch, Tensorflow, Torch, Matconvnet
Languages English, Korean