

Dahun Kim

Ph.D., Robotics and Computer Vision Lab.
Korea Advanced Institute of Science and Technology (KAIST)

mcahny01@gmail.com
<https://mcahny.github.io>
+82-10-3708-0726

Research Interests	<ul style="list-style-type: none">• Deep Learning; Learning with video data, Learning with minimal human supervision• Computer Vision; Image/Video understanding (pixel level, high level), Recognition, Image/Video Processing, Representation learning	
Research Experiences	<ul style="list-style-type: none">• Google AI, Virtual (with LA, CA) Student Researcher on “end-to-end video segmentation with transformer” Mentor: Liang-Chieh Chen May.2021 - Jan.2022• Google Brain, Virtual (with MTV, CA) Research Intern, Robotics Group, Robot Vision team on “detect everything” - learning open-world object proposals. Mentors: Weicheng Kuo, Tsung-Yi Lin, Anelia Angelova Jun.2020 - Nov.2020• Adobe Research, San Jose, CA, Research Intern, Deep Learning Group, Creative Intelligence Lab on “video panoptic segmentation” - segmenting and tracking all pixels. Mentor: Joon-Young Lee Jun.2019 - Sep.2019	
Education	<ul style="list-style-type: none">• Ph.D. in Electrical Engineering, KAIST, Advisor: Prof. In So Kweon Mar.2018 - Feb.2022 Thesis: “Learning Dense Pixel Features for Video Processing and Understanding”• M.S. in Electrical Engineering, KAIST, Advisor: Prof. In So Kweon Mar.2016 - Feb.2018 Thesis: “Reducing Human Supervision in Supervised Learning”• B.S. in Electrical Engineering, KAIST, Feb.2012 - Feb.2016	
Publications	<ul style="list-style-type: none">• Preprints: P1. M. Weber, H. Wang, S. Qiao, J. Xie, M. D. Collins, Y. Zhu, L. Yuan, Dahun Kim, Q. Yu, D. Cremers, L. Leal-Taixe, A. L. Yuille, F. Schroff, H. Adam, L.-C. Chen “DeepLab2: a TensorFlow library for deep labeling”. Technical Report, arXiv 2021• Peer-Reviewed Conferences and Journals - Selected: 016. Dahun Kim, J. Xie, H. Wang, S. Qiao, H.-S. Kim, H. Adam, I.S. Kweon, L.-C. Chen “TubeFormer-DeepLab: video mask transformer”. in CVPR 2022, New Orleans, USA 015. Q. Yu, H. Wang, Dahun Kim, S. Qiao, M. Collins, Y. Zhu, H. Adam, A. Yuille, L.-C. Chen “Dynamic clustering mask transformers for panoptic segmentation”. in CVPR 2022, New Orleans, USA 014. Dahun Kim, T.-Y. Lin, A. Angelova, I. S. Kweon, W. Kuo “Learning open-world object proposals without learning to classify”. in <i>IEEE Robotics and Automation Letters</i> (RA-L) and ICRA 2022, Philadelphia, USA 013. Y. Kwon, Dahun Kim, D. Ceylan, H. Fuchs “Neural Human Performer: learning generalizable radiance fields for human performance rendering”. in NeurIPS 2021 (Spotlight), Virtual (Acceptance: < 3.0%)	

012. S. Woo, **Dahun Kim**, J.-Y. Lee, I. S. Kweon,
 “Learning to associate every segment for video panoptic segmentation”,
 in **CVPR 2021**, Virtual
011. Y. Kwon, S. Petrangeli, **Dahun Kim**, H. Wang, E. Park, V. Swaminathan, H. Fuchs,
 “Rotationally-temporally consistent novel-view synthesis of human performance video”,
 in **ECCV 2020 (Spotlight)**, Virtual (Acceptance: 265/5025 \approx 5.3%)
010. **Dahun Kim**, S. Woo, J.-Y. Lee, I. S. Kweon,
 “Video panoptic segmentation”,
 in **CVPR 2020 (Oral)**, Virtual (Acceptance: 335/6656 \approx 5.0%)
009. **Dahun Kim***, S. Woo*, J.-Y. Lee, I. S. Kweon,
 “Recurrent temporal aggregation framework for deep video inpainting”,
 in *IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI 2020)*, IF=17.730
008. Y. Jung, **Dahun Kim**, S. Woo, K. Kim, S. Kim, I. S. Kweon,
 “Hide-and-Tell: Learning to bridge photo streams for visual storytelling”,
 in **AAAI 2020**, New York, USA (Acceptance: 1591/7737 \approx 20.6%)
007. **Dahun Kim***, S. Woo*, J.-Y. Lee, I. S. Kweon,
 “Deep video inpainting”,
 in **CVPR 2019**, Long Beach, USA (Acceptance: 1294/5160 \approx 25.2%)
006. **Dahun Kim***, S. Woo*, J.-Y. Lee, I. S. Kweon,
 “Deep blind video decaptioning by temporal aggregation and recurrence”,
 in **CVPR 2019**, Long Beach, USA (Acceptance: 1294/5160 \approx 25.2%)
005. **Dahun Kim**, D. Cho, I. S. Kweon,
 “Self-supervised video representation learning with space-time cubic puzzles”,
 in **AAAI 2019 (Oral)**, Honolulu, USA (Acceptance: 459/7095 \approx 6.5%)
004. Y. Jung, D. Cho, **Dahun Kim**, S. Woo, I. S. Kweon,
 “Discriminative feature learning for unsupervised video summarization”,
 in **AAAI 2019 (Oral)**, Honolulu, USA (Acceptance: 459/7095 \approx 6.5%)
003. S. Woo*, **Dahun Kim***, D. Cho, I. S. Kweon,
 “LinkNet: relational embedding for scene graph”,
 in **NeurIPS 2018**, Montreal, Canada (Acceptance: 1011/4856 \approx 20.8%)
002. **Dahun Kim**, D. Cho, D. Yoo, I. S. Kweon,
 “Learning image representations by completing damaged jigsaw puzzles”,
 in **WACV 2018 (Oral)**, Lake Tahoe, USA
001. **Dahun Kim**, D. Cho, D. Yoo, I. S. Kweon,
 “Two-phase learning for weakly supervised object localization”,
 in **ICCV 2017**, Venice, Italy (Acceptance: 621/2143 \approx 28.9%)

Reviewer
 Experiences

- CVPR, NeurIPS, ECCV, ICCV, ICML, ICLR, AAAI
- TPAMI, TNNLS, TIP, EuroGraphics

Patents

P3. VIDEO PANOPTIC SEGMENTATION (US Patent App. 16/852,647)

P2. PANOPTIC SEGMENTATION (US Patent App. 16/849,716)

P1. METHOD AND DEVICE FOR HIERARCHICAL LEARNING OF NEURAL NETWORK,
BASED ON WEAKLY SUPERVISED LEARNING (US Patent App. 16/758,089)

Awards and Honors

- | | |
|--|---------------------|
| ● Best Ph.D. Thesis Award, EE, KAIST | Apr.2022 |
| ● Bronze Award, 28th HumanTech Paper Award,
Samsung Electronics Co., Ltd. (\$5,000) | Feb.2022 |
| ● Qualcomm Innovation Award 2021 | Nov.2021 |
| ● Outstanding Reviewers Award, CVPR 2021 | Aug.2021 |
| ● Outstanding Reviewers Award, ECCV 2020 | Aug.2020 |
| ● Microsoft Research Asia (MSRA) Ph.D Fellowship 2019 Winner (\$10,000) | Oct.2019 |
| ● 1-st Place Award in ChaLearnLAP 2018 Inpainting Challenge
Track 2: video decaptioning (ECCV2018 Challenge) | Sep.2018 |
| ● Global Ph.D Fellowship, National Research Foundation of Korea
(National Minister fellowship – \approx \$60,000 + 3-year full scholarship) | Mar.2018 - Feb.2021 |
| ● KAIST-Samsung Industry-University Cooperation, Best Paper Award (\$3,000) | Jul.2020 |
| ● Bronze Award, 27th HumanTech Paper Award,
Samsung Electronics Co., Ltd. (\$5,000) | Feb.2021 |
| ● Honorable Mention, 25th HumanTech Paper Award,
Samsung Electronics Co., Ltd. (\$2,000) | Feb.2019 |
| ● Lab Student Representative (over 30 members), | Sep.2019 - Jul.2020 |
| ● Bronze Prize, Best Paper Award, 31th IPIU | Feb.2019 |
| ● International Computer Vision Summer School (ICVSS), Sicily, Italy | Jul.2018 |

References

Prof. In So Kweon (M.S. - Ph.D. advisor at KAIST)
KEPCO Chair Professor
School of Electrical Engineering, KAIST
Email: iskweon77@kaist.ac.kr, +82-42-350-5465

Dr. Joon-Young Lee (Internship mentor)
Senior Research Scientist, Adobe Research
Email: jolee@adobe.com

Dr. Liang-Chieh Chen (Internship mentor)
Research Scientist, Google Research
Email: lcchen@cs.ucla.edu

Dr. Weicheng Kuo (Internship mentor)
Research Scientist, Google Brain
Email: weicheng@google.com

Dr. Tsung-Yi Lin (Internship mentor)
Research Scientist, Nvidia Research
Email: tsungyilin87@gmail.com