Dahun Kim

Ph.D. Candidate, Robotics and Computer Vision Lab.
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Research Interests

- **Deep Learning;** Minimal human supervision: Self-supervised learning, Weakly-supervised learning.
- **Computer Vision;** Recognition, Image/Video understanding (pixel level, high level), Image/Video Processing, Representation learning

Research Experiences

- **Google Brain**, Mountain View, CA, Jun.2020 - Sep.2020
  Research Intern, Robotics Group, Robot Vision team
- **Adobe Research**, San Jose, CA, Jun.2019 - Sep.2019
  Research Intern, Deep Learning Group, Creative Intelligence Lab
- **KAIST**, Daejeon, Korea, Mar.2016 - Present
  Research Assistant, Robotics and Computer Vision Lab,

Education

- **Ph.D.** in Electrical Engineering, **KAIST,** Mar.2018 - Present
  Advisor: Prof. In So Kweon
- **M.S.** in Electrical Engineering, **KAIST,** Mar.2016 - Feb.2018
  Advisor: Prof. In So Kweon
  Thesis: "Reducing Human Supervision in Supervised Learning"
- **B.S.** in Electrical Engineering, **KAIST,** Feb.2012 - Feb.2016
- **Exchange** student program, **KTH Royal Institute of Technology** in Stockholm, Sweden Aug.2014 - Feb.2015

Publications

- **Peer-Reviewed Conferences:**

C14. Youngjoong Kwon, S. Petrangeli, **Dahun Kim**, H. Wang, Henry Fuchs, Vishy Swaminathan,
"Rotationally-Consistent Novel View Synthesis for Humans",
in ACM **MM 2020** (Acceptance: 472/1698 $\approx$ 27.8%)

C13. Sanghyun Woo, **Dahun Kim**, KwanYoung Park, Joon-Young Lee, In So Kweon,
" Align-and-Attend Network for Globally and Locally Coherent Video Inpainting",
in **BMVC 2020** (Acceptance: 195/670 $\approx$ 29.1%)

C12. Youngjoong Kwon, Stefano Petrangeli, **Dahun Kim**, Haoliang Wang, Eunbyung Park, Vishy Swaminathan, Henry Fuchs,
"Rotationally-Temporally Consistent Novel-View Synthesis of Human Performance Video",
in **ECCV 2010 (Spotlight)** (Acceptance: 265/5025 $\approx$ 5.3%)

C11. **Dahun Kim**, Sanghyun Woo, Joon-Young Lee, In So Kweon,
"Video Panoptic Segmentation",
in **CVPR 2020 (Oral)** (Acceptance: 335/6656 $\approx$ 5.0%)

C10. Yunjae Jung, **Dahun Kim**, Sanghyun Woo, Kyunsu Kim, Sungjin Kim, In So Kweon,
"Hide-and-Tell: Learning to Bridge Photo Streams for Visual Storytelling",
in **AAAI 2020**, New York, USA (Acceptance: 1591/7737 $\approx$ 20.6%)

C09. Kwanyong Park, Sanghyun Woo, **Dahun Kim**, Donghyeon Cho, In So Kweon,
"Preserving Semantic and Temporal Consistency for Unpaired Video-to-Video Translation",
in ACM **MM 2019**, Nice, France (Acceptance: 252/936 $\approx$ 26.9%)

C08. Donghyeon Cho, Yunjae Jung, Francois Rameau, **Dahun Kim**, Sanghyun Woo, In So Kweon, "Video Retargeting: Trade-off between Content Preservation and Spatio-temporal Consistency", in ACM **MM 2019**, Nice, France (Acceptance: 252/936 ≈ 26.9%)

C07. **Dahun Kim***, Sanghyun Woo*, Joon-Young Lee, In So Kweon, "Deep Video Inpainting", in **CVPR 2019**, Long Beach, USA (Acceptance: 1294/5160 ≈ 25.2%)

C06. **Dahun Kim***, Sanghyun Woo*, Joon-Young Lee, In So Kweon, "Deep Blind Video Decaptioning by Temporal Aggregation and Recurrence", in **CVPR 2019**, Long Beach, USA (Acceptance: 1294/5160 ≈ 25.2%)

C05. **Dahun Kim**, Donghyeon Cho, In So Kweon, "Self-Supervised Video Representation Learning with Space-Time Cubic Puzzles", in **AAAI 2019 (Oral)**, Honolulu, USA (Acceptance:459/7095 ≈ 6.5%)

C04. Yunjae Jung, Donghyeon Cho, **Dahun Kim**, Sanghyun Woo, In So Kweon, "Discriminative Feature Learning for Unsupervised Video Summarization", in **AAAI 2019 (Oral)**, Honolulu, USA (Acceptance: 459/7095 ≈ 6.5%)

C03. Sanghyun Woo*, **Dahun Kim***, Donghyeon Cho, In So Kweon, "LinkNet: Relational Embedding for Scene Graph", in **NeurIPS 2018**, Montreal, Canada (Acceptance: 1011/4856 ≈ 20.8%)

C02. **Dahun Kim**, Donghyeon Cho, Donggeun Yoo, In So Kweon, "Learning Image Representations by Completing Damaged Jigsaw Puzzles", in **WACV 2018 (Oral)**, Lake Tahoe, USA

C01. **Dahun Kim**, Donghyeon Cho, Donggeun Yoo, In So Kweon, "Two-Phase Learning for Weakly Supervised Object Localization", in **ICCV 2017**, Venice, Italy (Acceptance: 621/2143 ≈ 28.9%)

• **Peer-Reviewed Journals:**

J1. **Dahun Kim***, Sanghyun Woo*, Joon-Young Lee, In So Kweon, "Recurrent Temporal Aggregation Framework for Deep Video Inpainting", in *IEEE Trans. on Pattern Analysis and Machine Intelligence* (**TPAMI 2020**), IF=17.730

Reviewer Experiences

- International Conf. on Learning Representations (ICLR) 2021
- Conf. on Neural Information Processing Systems (NeurIPS) 2020
- European Conf. on Computer Vision (ECCV) 2020
- IEEE Conf. on Computer Vision and Pattern Recognition (CVPR) 2020
- Association for the Advancement of Artificial Intelligence (AAAI) 2020, 2021
- IEEE International Conf. on Computer Vision (ICCV) 2019
- IEEE Trans. on Neural Networks and Learning Systems (TNNLS)
- IEEE Trans. on Image Processing (TIP)
- IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI)

Awards and Honors

- Microsoft Research Asia (MSRA) Ph.D Fellowship 2019 Winner ($10,000) — Oct.2019
- 1-ST Place Award in ChaLearnLAP 2018 Inpainting Challenge Track 2: video decaptioning (ECCV2018 Challenge) — Sep.2018
- Global Ph.D Fellowship, National Research Foundation of Korea ($\approx$ $60,000 + 3-year full scholarship) — Mar.2018 - Feb.2021
- KAIST-Samsung Industry-University Cooperation, Best Paper Award ($3,000) — Jul.2020
- Honorable Mention, 24th HumanTech Paper Award, Samsung Electronics Co., Ltd. ($2,000) — Feb.2018
- 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

Teaching Experiences

- Teaching assistant at EE dept., KAIST
  EE305 Introduction to electronics lab. (Spring, 2017)
  EE209 Programming Structures for Electrical Engineering (Fall, 2017)
  EE898 Advanced Topics in Deep Learning for Robotics and Vision (Spring, 2018)
  EE735 Computer Vision (Fall, 2019)

Computer Skills

Languages: Python, Matlab, Lua
Libraries: Pytorch, Tensorflow, Caffe

Languages

English(fluent), Korean(native)

References

Prof. In So Kweon
School of Electrical Engineering, KAIST
Email: iskweon77@kaist.ac.kr
Homepage: http://rcv.kaist.ac.kr
Relationship: M.S. - Ph.D. advisor in KAIST