

Donghyun Kim

CONTACT INFORMATION

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RESEARCH INTERESTS

Transfer Learning, Multimodal, Universal, Un/Self-supervised Representation Learning

ACADEMIC & WORK EXPERIENCE

Assistant Professor, Dept. of AI at Korea University Sep 2023 to Present

Research Staff Member, MIT-IBM Watson AI Lab, MA July 2022 to Aug 2023

Student Researcher, Google AI, Mountain View, CA Aug 2021 to Nov 2021
Project: Multi-modal Representation Learning with Image-text Data
Mentor: Dr. Choa Jia, Dr. Tsung-Yi Lin

Research Intern, Google AI, Mountain View, CA June 2021 to Aug 2021
Project: Multi-modal Representation Learning
Mentor: Dr. Choa Jia, Dr. Tsung-Yi Lin

Research Intern, NEC Labs, San Jose, CA June 2020 to Aug 2020
Project: Multimodal Video Representation Learning
Mentor: Dr. Yi-Hsuan Tsai, Dr. Xiang Yu, Dr. Bingbing Zhuang, Prof. Manmohan Chandraker

Research Intern, Amazon Go, Seattle, WA May 2019 to Aug 2019
Project: Multi-task Learning for Video Streams
Mentor: Dr. Tian Lan, Dr. Chuhan Zou, Ning Xu

EDUCATION

Boston University, Boston, MA

Ph.D., Computer Science, May 2022
Advisor: Prof. Stan Sclaroff, Prof. Kate Saenko
Research Group: Image and Video Computing Group

University of Southern California, Los Angeles, CA

M.S., Computer Science, May 2017, GPA: 3.9/4.0
Advisor: Prof. Gerard Medioni, Dr. Jongmoo Choi
Research Group: USC IRIS Computer Vision Lab

Sogang University, Seoul, Korea

B.S., Computer Science and Engineering, July 2014, *Magna Cum Laude*

PREPRINTS

1. Quanfu Fan*, **Donghyun Kim***, Richard Chun-Fu Chen*, Stan Sclaroff, Kate Saenko, Sarah Adel Bargal. Temporal Relevance Analysis for Video Action Modeling. [\[arXiv\]](#)

PUBLICATIONS

1. Jongwoo Park, Kumara Kahatapitiya, **Donghyun Kim**, Shivchander Sudalairaj, Quanfu Fan, Michael S Ryoo. Grafting Vision Transformers. WACV, 2024. [[arXiv](#)]
2. Howard Zhong, Samarth Mishra, **Donghyun Kim**, SouYoung Jin, Rameswar Panda, Hilde Kuehne, Leonid Karlinsky, Venkatesh Saligrama, Aude Oliva, Rogerio Feris, Learning Human Action Recognition Representations Without Real Humans. NeurIPS, 2023.
3. Sivan Doveh, Assaf Arbelle, Sivan Harary, Roei Herzig, **Donghyun Kim**, Paola Cascante-Bonilla, Amit Alfassy, Rameswar Panda, Raja Giryes, Rogerio Feris, Shimon Ullman, Leonid Karlinsky, Dense and Aligned Captions (DAC) Promote Compositional Reasoning in VL Models. NeurIPS, 2023.
4. Kaihong Wang, **Donghyun Kim**, Rogerio Feris, Margrit Betke, Kate Saenko. CDAC: Cross-domain Attention Consistency in Transformer for Domain Adaptive Semantic Segmentation. International Conference on Computer Vision (ICCV), 2023. [[arXiv](#)]
5. Cascante-Bonilla P, Shehada K, Smith JS, Doveh S, **Kim D**, Panda R, Varol G, Oliva A, Ordonez V, Feris R, Karlinsky L. Going Beyond Nouns With Vision & Language Models Using Synthetic Data. International Conference on Computer Vision (ICCV), 2023. [[arXiv](#)]
6. Smith, J.S., Karlinsky, L., Gutta, V., Cascante-Bonilla, P., **Kim, D.**, Arbelle, A., Panda, R., Feris, R. and Kira, Z. CODA-Prompt: COntinual Decomposed Attention-based Prompting for Rehearsal-Free Continual Learning. Computer Vision and Pattern Recognition (CVPR), 2023. [[arXiv](#)]
7. Smith, J.S., Cascante-Bonilla, P., Arbelle, A., **Kim, D.**, Panda, R., Cox, D., Yang, D., Kira, Z., Feris, R. and Karlinsky, L. ConStruct-VL: Data-Free Continual Structured VL Concepts Learning. Computer Vision and Pattern Recognition (CVPR), 2023. [[arXiv](#)]
8. D. Bashkirova, P. Teterwak, S. Mishra, **D. Kim**, , R. Lai, F. Alladkani, J. Akl, B. Calli, V. Ablavsky, S. Bargal, K. Saenko. VisDA 2022 Challenge: Sim2Real Domain Adaptation for Industrial Recycling. Neural Information Processing Systems (NeurIPS) Competition, 2022.
9. **Donghyun Kim**, Kaihong Wang, Stan Sclaroff, Kate Saenko. A Broad Study of Pre-training for Domain Generalization and Adaptation. European Conference on Computer Vision (ECCV), 2022. [[arXiv](#)]
10. **Donghyun Kim***, Kaihong Wang*, Kate Saenko, Margrit Betke, Stan Sclaroff. A Unified Framework for Domain Adaptive Pose Estimation. European Conference on Computer Vision (ECCV), 2022. [[arXiv](#)]
11. Kuniaki Saito, **Donghyun Kim**, Kate Saenko. OpenMatch: Open-set Consistency Regularization for Semi-supervised Learning with Outliers. Neural Information Processing Systems (NeurIPS), 2021. [[arXiv](#)]
12. D. Bashkirova*, D Hendrycks*, **D. Kim***, S. Mishra*, K. Saenko*, K. Saito*, P. Teterwak*, B. Usman*. VisDA-2021 Competition: Universal Domain Adaptation to Improve Performance on Out-of-Distribution Data. Neural Information Processing Systems (NeurIPS) Competition, 2021. [[arXiv](#)]
13. **Donghyun Kim**, Kuniaki Saito, Tae-Hyun Oh, Bryan A Plummer, Stan Sclaroff, Kate Saenko. CDS: Cross-domain Self-supervised Pre-training. International Conference on Computer Vision (ICCV), 2021. [[Paper](#)]

14. **Donghyun Kim**, Yi-Hsuan Tsai, Bingbing Zhuang, Xiang Yu, Stan Sclaroff, Kate Saenko, Manmohan Chandraker. Learning Cross-Modal Contrastive Features for Video Domain Adaptation. International Conference on Computer Vision (ICCV), 2021. [[Paper](#)]
15. Kuniaki Saito, **Donghyun Kim**, Piotr Teterwak, Stan Sclaroff, Trevor Darrell, Kate Saenko. Tune it the Right Way: Unsupervised Validation of Domain Adaptation via Neighborhood Density. International Conference on Computer Vision (ICCV), 2021. [[Paper](#)]
16. **Donghyun Kim**, Kuniaki Saito, Samarth Misra, Stan Sclaroff, Kate Saenko, Bryan Plummer. Self-supervised Visual Attribute Learning for Fashion Compatibility. ICCV VIPriors Workshop, 2021. [[Paper](#)]
17. **Donghyun Kim**, Tian Lan, Chuhan Zou, Ning Xu, Bryan A Plummer, Stan Sclaroff, Jayan Eledath, Gerard Medioni. Multi-Task Learning from Videos via Efficient Inter-Frame Attention. ICCV MTL Workshop, 2021. [[Paper](#)]
18. Kuniaki Saito, **Donghyun Kim**, Stan Sclaroff, Kate Saenko. Universal Domain Adaptation Through Self-supervision. Neural Information Processing Systems (NeurIPS), 2020. [[Paper](#)]
19. Andrea Burns, **Donghyun Kim**, Derry Wijaya, Kate Saenko, Bryan A Plummer. Learning to Scale Multilingual Representations for Vision-Language Tasks. European Conference on Computer Vision (ECCV), 2020 (Spotlight). [[Paper](#)]
20. **Donghyun Kim**, Sarah Adel Bargal, Jianming Zhang, Stan Sclaroff. Multi-way Encoding for Robustness. Winter Conference on Applications of Computer Vision (WACV), 2020. [[Paper](#)]
21. **Donghyun Kim**, Kuniaki Saito, Kate Saenko, Stan Sclaroff, Bryan Plummer. MULE: Multimodal Universal Language Embedding. Proceedings of the AAAI Conference on Artificial Intelligence (AAAI), 2020 (Oral). [[Paper](#)]
22. Kuniaki Saito, **Donghyun Kim**, Stan Sclaroff, Trevor Darrell, Kate Saenko. Semi-supervised Domain Adaptation via Minimax Entropy. International Conference on Computer Vision (ICCV), 2019. [[Paper](#)]
23. **Donghyun Kim**, Kuniaki Saito, Kate Saenko, Stan Sclaroff, Bryan Plummer. MULE: Multimodal Universal Language Embedding. ICCV CLVL Workshop, 2019.
24. Sarah Adel Bargal*, Andrea Zunino*, **Donghyun Kim**, Jianming Zhang, Vittorio Murino, Stan Sclaroff. Excitation Backprop for RNNs. Computer Vision and Pattern Recognition (CVPR), 2018. [[Paper](#)]
25. **Donghyun Kim**, Matthias Hernandez, Jongmoo Choi, Gérard Medioni. Deep 3D Face Identification., International Joint Conference on Biometrics (IJCB), 2017 (Oral). [[Paper](#)]
26. **Donghyun Kim**, Jongmoo Choi, Jatuporn Toy Leksut, Gérard Medioni. Expression Invariant 3D Face Modeling from an RGB-D Video. International Conference on Pattern Recognition (ICPR), 2016 (Oral). [[Paper](#)]
27. **Donghyun Kim**, Jongmoo Choi, Jatuporn Toy Leksut, Gérard Medioni. Accurate 3D face modeling and recognition from RGB-D stream in the presence of large pose changes. IEEE International Conference on Image Processing (ICIP), 2016. [[Paper](#)]

PATENT

1. Yi-Hsuan Tsai, Xiang Yu, BingBing Zhuang, Manmohan Chandraker, Donghyun Kim. "Video domain adaptation via contrastive learning." U.S. Patent Application No. 17/521,057.

SCHOLARSHIPS &
AWARDS

<i>Doctoral Consortium</i> , CVPR 2022	June 2022
<i>Research Fellowship</i> , Boston University	May 2018 - May 2022
<i>\$10,000 AWS Research Credit</i> , Amazon	2019
<i>Amazons Graduate Research Symposium Travel Grant</i>	2019
<i>Teaching Fellowship</i> , Boston University	Jan 2018
<i>Dean's Fellowship</i> , Boston University	Aug 2017
<i>Research Assistant</i> , University of Southern California	May 2015 - May 2017

ACADEMIC
ACTIVITIES

Conference Reviewers: CVPR (2020-2023), ICCV (2021-2023), ECCV (2020-2022), ICML (2020-2023), NeurIPS (2020-2023), ICLR (2020-2022), AAAI (2020-2022), WACV (2020-2022), IJCAI (2021-2022)
Journal Reviewer: TPAMI (2021-2022)

TECHNICAL SKILL PyTorch, TensorFlow, Keras, Python, Matlab, C, C++, Objective C