

Xihui Liu

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📄 [xh-liu.github.io](https://github.com/xh-liu)
Google Scholar Link

Assistant Professor at The University of Hong Kong

Employment

- 07/2022-now **The University of Hong Kong**
Assistant Professor at the Department of Electronic and Electrical Engineering and Institute of Data Science.
- 08/2021-07/2022 **UC Berkeley**
Postdoc in EECS Department and Berkeley Artificial Intelligence Research (BAIR)
Advisor: Prof. Trevor Darrell

Education

- 07/2021 **The Chinese University of Hong Kong**
Ph.D. in Electronic Engineering. Adobe Research Fellowship.
Advisors: Prof. Xiaogang Wang, Prof. Hongsheng Li.
- 07/2017 **Tsinghua University**
B.Eng. in Electronic Engineering. Outstanding Graduate Award.

Awards and Honors

- 2022 World Artificial Intelligence Conference (WAIC) Rising Star Award.
- 2021 **MIT EECS Rising Stars.**
- 2021 CVPR Doctoral Consortium (mentored by Prof. Antonio Torralba at MIT).
- 2021 ICLR Outstanding Reviewer Award.
- 2020 **Adobe Research Fellowship** (10 awardees globally each year).
- 2019 CVPR Outstanding Reviewer Award.
- 2017 Outstanding Graduate in Tsinghua University.
- 2016 Champion of ImageNet Video Object Detection Challenge (as a member of CUVideo team)

Publications

- [1] More Control for Free! Image Synthesis with Semantic Diffusion Guidance
Xihui Liu, Dong Huk Park, Samaneh Azadi, Gong Zhang, Arman Chopikyan, Yuxiao Hu, Humphrey Shi, Anna Rohrbach, Trevor Darrell.
IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) 2023.
- [2] Point Transformer V2: Grouped Vector Attention and Partition-based Pooling
Xiaoyang Wu, Yixing Lao, Li Jiang, Xihui Liu, Hengshuang Zhao.
Conference on Neural Information Processing Systems (NeurIPS) 2022.
- [3] Back to the Source: Diffusion-Driven Test-Time Adaptation
Jin Gao*, Jialing Zhang*, **Xihui Liu**, Trevor Darrell, Evan Shelhamer*, Dequan Wang*.
2022.
- [4] Learning Transferable Spatiotemporal Representations from Natural Script Knowledge
Ziyun Zeng*, Yuying Ge*, **Xihui Liu**, Bin Chen, Ping Luo, Shu-Tao Xia, Yixiao Ge.
2022.

- [5] MILES: Visual BERT Pre-training with Injected Language Semantics for Video-text Retrieval
Yuying Ge, Yixiao Ge, **Xihui Liu**, Alex Jinpeng Wang, Jianping Wu, Ying Shan, Xiaohu Qie, Ping Luo.
European Conference on Computer Vision (ECCV) 2022.
- [6] Bridging Video-text Retrieval with Multiple Choice Questions
Yuying Ge, Yixiao Ge, **Xihui Liu**, Dian Li, Ying Shan, Xiaohu Qie, Ping Luo.
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2022.
- [7] Benchmark for Compositional Text-to-Image Synthesis
Dong Huk Park*, Samaneh Azadi*, **Xihui Liu**, Trevor Darrell, Anna Rohrbach. (* equal contribution)
Conference on Neural Information Processing Systems (NeurIPS) Dataset and Benchmark Track, 2021.
- [8] Open-Edit: Open-Domain Image Manipulation with Open-Vocabulary Instructions
Xihui Liu, Zhe Lin, Jianming Zhang, Handong Zhao, Quan Tran, Xiaogang Wang, Hongsheng Li.
European Conference on Computer Vision (ECCV), 2020.
- [9] Learning to Predict Layout-to-image Conditional Convolutions for Semantic Image Synthesis
Xihui Liu, Guojun Yin, Jing Shao, Xiaogang Wang, Hongsheng Li.
Conference on Neural Information Processing Systems (NeurIPS), 2019.
- [10] CAMP: Cross-Modal Adaptive Message Passing for Text-Image Retrieval
Zihao Wang*, **Xihui Liu***, Hongsheng Li, Lu Sheng, Junjie Yan, Xiaogang Wang, Jing Shao. (* equal contribution)
IEEE International Conference on Computer Vision (ICCV), 2019.
- [11] Improving Referring Expression Grounding with Cross-modal Attention-guided Erasing
Xihui Liu, Zihao Wang, Hongsheng Li, Jing Shao, Xiaogang Wang.
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2019.
- [12] Show, Tell and Discriminate: Image Captioning by Self-Retrieval with Partially Labeled Data
Xihui Liu, Hongsheng Li, Jing Shao, Dapeng Chen, Xiaogang Wang.
European Conference on Computer Vision (ECCV), 2018.
- [13] Improving Deep Visual Representation for Person Re-identification by Global and Local Image-Language Association
Dapeng Chen, Hongsheng Li, **Xihui Liu**, Yantao Shen, Jing Shao, Zejian Yuan, Xiaogang Wang.
IEEE International Conference on Computer Vision (ICCV), 2018.
- [14] Localization Guided Learning for Pedestrian Attribute Recognition
Pengze Liu, **Xihui Liu**, Junjie Yan, Jing Shao.
British Machine Vision Conference (BMVC), 2018.
- [15] Hydraplus-Net: Attentive Deep Features for Pedestrian Analysis
Xihui Liu*, Haiyu Zhao*, Maoqing Tian, Lu Sheng, Jing Shao, Shuai Yi, Junjie Yan, Xiaogang Wang.
IEEE International Conference on Computer Vision (ICCV), 2017.
- [16] Orientation Invariant Feature Embedding and Spatial Temporal Regularization for Vehicle Re-identification
Zhongdao Wang, Luming Tang, **Xihui Liu**, Zhuliang Yao, Shuai Yi, Jing Shao, Junjie Yan, Shengjin Wang, Hongsheng Li, Xiaogang Wang.
IEEE International Conference on Computer Vision (ICCV), 2017.
- [17] Object Detection in Videos with Tubelet Proposal Networks
Kai Kang, Hongsheng Li, Tong Xiao, Wanli Ouyang, Junjie Yan, **Xihui Liu**, Xiaogang Wang.
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017.

Research Internships

- 2020 summer Research Intern in NVIDIA Research
Mentors: Dr. Ming-Yu Liu and Dr. Ting-Chun Wang
- 2019 summer Research Intern in Adobe Research
Mentors: Dr. Zhe Lin, Dr. Jianming Zhang, Dr. Handong Zhao, Dr. Quan Tran.
- 2016 summer Research Assistant at The Chinese University of Hong Kong
Advisor: Prof. Xiaogang Wang.

Professional Services

Conference Reviewer:

- 2022 Conference on Neural Information Processing Systems (NeurIPS)
- 2019-2022 International Conference on Machine Learning (ICML)
- 2020-2022 European Conference on Computer Vision (ECCV)
- 2019-2022 IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
- 2020-2022 AAAI Conference on Artificial Intelligence (AAAI)
- 2019-2021 IEEE International Conference on Computer Vision (ICCV)
- 2020-2022 International Conference on Machine Learning (ICML)
- 2020-2022 International Conference on Learning Representations (ICLR)

Journal Reviewer (20+ times):

- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
- International Journal of Computer Vision (IJCV)
- IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)
- IEEE Transactions on Multimedia (TMM)
- Neurocomputing

Teaching Experiences

Teaching assistant of the following courses at CUHK:

- Spring 2019 ELEG 5491, Introduction to Deep Learning.
- Fall 2018 ELEG 5760, Machine Learning for Signal Processing Applications.
- Spring 2020 ENGG 5202, Pattern Recognition.
- Fall 2017 ENGG 5202, Pattern Recognition.
- Fall 2020 ENGG 2450A, Probability and Statistics for Engineers.
- Spring 2018 ENGG 2450A, Probability and Statistics for Engineers.
- Spring 2021 ENGG 2740A, Differential Equations for Engineers.
- Fall 2019 ENGG 2420B, Complex Analysis and Differential Equations for Engineers.
- Summer 2018 Potential Inspiration of Electronic Engineering.