Xihui Liu

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Education

- **Multimedia Lab (MMLab), Chinese University of Hong Kong** — **Hong Kong, China**
  PhD student advised by Prof. Xiaogang Wang and Prof. Hongsheng Li. — *08/2017–now*
  Research interests: image synthesis and editing with generative adversarial networks
- **Tsinghua University** — **Beijing, China**
  B.S. in Electronic Engineering — *08/2013–07/2017*
  GPA 91/100, ranking top 10%. Excellent undergraduate awardee.

Publications

Xihui Liu, Guojun Yin, Jing Shao, Xiaogang Wang, and Hongsheng Li. "Learning to Predict Layout-to-image Conditional Convolutions for Semantic Image Synthesis." *Thirty-third Conference on Neural Information Processing Systems (**NeurIPS**)*, 2019.

Zihao Wang*, **Xihui Liu***, Hongsheng Li, Lu Sheng, Junjie Yan, Xiaogang Wang, and Jing Shao. "CAMP: Cross-Modal Adaptive Message Passing for Text-Image Retrieval." *International Conference on Computer Vision (**ICCV**)*, 2019.

Xihui Liu, Zihao Wang, Hongsheng Li, Jing Shao, and Xiaogang Wang. "Improving Referring Expression Grounding with Cross-modal Attention-guided Erasing." *The IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2019.

Xihui Liu, Hongsheng Li, Jing Shao, Dapeng Chen, and Xiaogang Wang. "Show, tell and discriminate: Image captioning by self-retrieval with partially labeled data." *European Conference on Computer Vision (**ECCV**)*, 2018.

Dapeng Chen, Hongsheng Li, **Xihui Liu**, Yantao Shen, Jing Shao, Zejian Yuan, and Xiaogang Wang. "Improving deep visual representation for person re-identification by global and local image-language association." *European Conference on Computer Vision (**ECCV**)*, 2018.

Pengze Liu, **Xihui Liu**, Junjie Yan, and Jing Shao. "Localization guided learning for pedestrian attribute recognition." *The British Machine Vision Conference (**BMVC**)*, 2017.

Xihui Liu, Haiyu Zhao, Maoqing Tian, Lu Sheng, Jing Shao, Shuai Yi, Junjie Yan, and Xiaogang Wang. "Hydraplus-net: Attentive deep features for pedestrian analysis." *International Conference on Computer Vision (**ICCV**)*, 2017.

Zhongdao Wang, Luming Tang, **Xihui Liu**, Zhuliang Yao, Shuai Yi, Jing Shao, Junjie Yan, Shengjin Wang, Hongsheng Li, and Xiaogang Wang. "Orientation invariant feature embedding and spatial temporal regularization for vehicle re-identification." *International Conference on Computer Vision (**ICCV**)*, 2017.

Kai Kang, Hongsheng Li, Tong Xiao, Wanli Ouyang, Junjie Yan, **Xihui Liu**, and Xiaogang Wang. "Object detection in videos with tubelet proposal networks." *The IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2017.

Selected Projects

- **Learning to Predict Layout-to-image Conditional Convolutions for Semantic Image Synthesis (NeurIPS 2019)**
  - Design a image generator with predicted layout-to-image conditional convolution kernels and feature pyramid semantics embedding discriminator for semantic image sythesis.
  - Achieve state-of-the-art performance on referring expression grounding datasets.
- **Improving Referring Expression Grounding with Cross-modal Attention-guided Erasing (CVPR 2019)**
  - Design a cross-modal attention-guided erasing approach on both textual and visual domains, to encourage the model to discover full textual-visual alignments for referring expression grounding.
  - Achieve state-of-the-art performance on referring expression grounding datasets.
- **Show, Tell and Discriminate: Image Captioning by Self-retrieval with Partially Labeled Data (ECCV 2018)**
  - Proposed an image captioning framework with a self-retrieval training guidance, which encourages generating discriminative captions. It can be trained with partially labeled data.
  - State-of-the-art performance on current evaluation metrics, as well as more discriminative and novel captions.
- **HydraPlus-Net: Attentive Deep Features for Pedestrian Analysis (ICCV 2017)**
  - Proposed multi-directional attention modules to train multilevel and multi-scale attention-strengthened features for fine-grained tasks of pedestrian analysis.
  - Stage-of-the-art performance on both pedestrian attribute recognition and person re-identification.
  - Released a large-scale pedestrian attribute recognition dataset for academic research.

Working Experience

- **Adobe Research** — **San Jose, US**
  Research Intern — *06/2019–08/2019*
  - Worked with Research Scientists Zhe Lin, Jianming Zhang, Handong Zhao, and Quan Tran.
- **Sensetime Research** — **Beijing, China**
  Research Intern — *09/2016–07/2017*
  - Built a person attribute recognition system, and conduct research on relevant topics with Dr. Jing Shao.
- **Multimedia Lab (MMLab), Chinese University of Hong Kong** — **Hong Kong, China**
  Research Assistant — *07/2016–09/2016*
  - Worked on object detection in videos with Dr. Kai Kang, supervised by Prof. Xiaogang Wang.
  - Our team won first place in ImageNet Video Object Detection Challenge with provided data, 2016.

Awards and Honors

- **Adobe Research Fellowship 2020.**
- CVPR 2019 outstanding reviewer award.
- CUHK Postgraduate Scholarship, 2017-now.
- Excellent undergraduate in Tsinghua University, 2017.
- Comprehensive Excellent Scholarship in Tsinghua University, in years 2014, 2015, and 2016.
- Research and Innovation Excellent Scholarship in Tsinghua University, 2016.
- Academic Excellent Scholarship in Tsinghua University, in years 2014, 2015 and 2016.