Xutong Ren

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Education

Carnegie Mellon University, School of Computer Science Pittsburgh, PA
Master of Science in Machine Learning Dec. 2020

- Teaching Assistant: *Introduction to Machine Learning (PhD).*

Peking University, School of Electronics Engineering and Computer Science Beijing, China
Bachelor of Science in Computer Science July 2019

- Teaching Assistant: *Introduction to Computer Systems.*

Publication

[1] **Xutong Ren**, Wenhan Yang, Wen-Huang Cheng and Jiaying Liu, "LR3M: Robust Low-Light Enhancement via Low-Rank Regularized Retinex Model," in *IEEE Transactions on Image Processing (TIP)*, vol. 29, pp. 5862-5876, 2020, doi: 10.1109/TIP.2020.2984098.

[2] Ryo Ishii*, **Xutong Ren***, Michal Muszynski and Louis-Philippe Morency, "Trimodal Prediction of Speaking and Listening Willingnessto Help Improve Turn-changing Modeling," submitted to *ICMI* 2020.

[3] Chen Wei, Lingxi Xie, **Xutong Ren**, Yingda Xia, Chi Su, Jiaying Liu, Qi Tian and Alan Yuille, "Iterative Reorganization with Weak Spatial Constraints: Solving Arbitrary Jigsaw Puzzles for Unsupervised Representation Learning," *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, June 2019.

[4] **Xutong Ren**, Mading Li, Wen-Huang Cheng and Jiaying Liu, "Joint Enhancement and Denoising Method via Sequential Decomposition," *IEEE International Symposium on Circuits and Systems (ISCAS)*, May 2018, pp. 1–5. (oral)

[5] **Xutong Ren**, Lingxi Xie, Chen Wei, Siyuan Qiao, Chi Su, Jiaying Liu, Qi Tian, Elliot Fishman and Alan Yuille, "Generalized Coarse-to-Fine Visual Recognition with Progressive Training," *Arxiv e-print 1811.12047.*

Work Experience

Huawei, Noah's Ark Lab Beijing, China
Computer Vision Research Intern May 2019 – Aug. 2019

- Explored the question of weakly supervised learning with binary/partial feedback and equipped current margin-based algorithms with active learning techniques.
- Wrote the "Weakly Supervised Learning" chapter of *Computer Vision White Paper* of Huawei.

Peking University, Institute of Computer Science and Technology Beijing, China
Research Assistant May 2017 – June 2019

- Proposed a joint low-light enhancement and denoising strategy based on a novel sequential Retinex decomposition concept, making simultaneous processing possible and improving visual quality.
- Explored a new issue of text effect assessment for estimating the quality of images generated by text effect transfer models.

Research Experience

Carnegie Mellon University, MultiComp Lab Pittsburgh, PA
Research Assistant Jan. 2020 – May. 2020

- Focused on explicitly modeling the willingness of speaking and listening for both conversational participants in the dyad interaction using trimodal inputs (acoustic, linguistic, and visual).
- Studied the impact of modeling willingness as a way to help improving the task of turn-changing prediction via multitask learning.

Google AI Machine Learning Winter Camp Beijing, China
Machine Learning Engineer Jan. 2019 – Jan. 2019

- Focused on the domain of image to image translation and realized local face attribute transfer on real human images in an unsupervised way, using cartoon images as a bridge.
- Trained and evaluated five different generative networks and won the *Most Technical Award*.

Johns Hopkins University, Center for Imaging Science Baltimore, MD
Research Visitor July 2018 – Sept. 2018

- Focused on visual representation learning in a self-supervised manner and built a recurrent solution to jigsaw puzzles of arbitrary permutations to transfer learned weights.
- Proposed a generalized coarse-to-fine model with progressive training strategy to improve stability and relieve over-fitting, which brings gains of $2\% - 10\%$ in a wide range of visual recognition tasks.

Skills

- Program Languages: C/C++, Python, MATLAB, Lua, SQL;
- Deep Learning Framework: PyTorch, Torch.