Xutong Ren

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EDUCATION

Carnegie Mellon University, School of Computer Science — Pittsburgh, PA
Master of Science in Machine Learning — Dec. 2020
- GPA: 4.06/4.00. Teaching Assistant: *Introduction to Machine Learning (PhD)*.

Peking University, School of Electronics Engineering and Computer Science — Beijing, China
Bachelor of Science in Computer Science (with Honorable Degree) — July 2019
- Major GPA: 3.81/4.00. 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 Willingness to 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

Microsoft, Security & Compliance Group — Redmond, WA
Data & Applied Science Intern — May 2020 – Aug. 2020
- Applied visual recognition techniques to phishing email detection and email templates exploration.
- Developed coarse-to-fine architectures and localization-classification networks in fine-grained image classification domain.

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.

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.
- Developed a low-rank solution to solve heavily degraded low-light images. Extended low-light enhancement methodology via low-rank decomposition to the video process.

RESEARCH EXPERIENCE

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 Assistant — 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.