Jun Xu, Ph.D.

Contact Information

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Research Interest

Computer Vision: image/video restoration, enhancement, segmentation.
Machine Learning: model compression, meta learning, network architecture search.

Education

The Hong Kong Polytechnic University, Hong Kong SAR, China

2014.07-2018.05, Ph.D., Department of Computing

- Supervisors: Prof. David Zhang (IEEE Fellow) and Prof. Lei Zhang (IEEE Fellow)

Nankai University, Tianjin, China

2011.09-2014.06, M.Sc., Information and Probability, School of Mathematics Sciences

- Supervisor: Prof. Jishou Ruan

2007.09-2011.06, B.Sc., Mathematics, School of Mathematics Sciences

- GPA: 87.0/100

Work Experience

Inception Institute of Artificial Intelligence, Abu Dhabi, United Arab Emirates

2018.09-Now, Research Scientist

Simon Fraser University, Burnaby, BC, Canada

2018.06-2018.09, Post-doctoral Fellow, School of Computing Science

- Supervisor: Yasutaka Furukawa

Manuscript

($^{\#}$ indicates contribute equally, * indicates the corresponding author.)

Jun Xu$^{\#,*}$, Yuan Huang$^{\#}$, Li Liu, Fan Zhu, Xingsong Hou, Ling Shao. Noisy-As-Clean: Learning Unsupervised Denoising from the Corrupted Image. 2019.
https://arxiv.org/abs/1906.06878

Ziqin Wang, **Jun Xu***, Li Liu, Fan Zhu, and Ling Shao. Edge-preserving Image Smoothing by Perceptual Edge Knowledge Distillation. 2019.

Yingkun Hou, **Jun Xu***, Mingxia Liu, Guanghai Liu, Li Liu, Fan Zhu, Ling Shao. NLH: A Blind Pixel-level Non-local Method for Real-world Image Denoising. https://arxiv.org/abs/1906.06834

Jun Xu, Yingkun Hou, Mengyang Yu, Li Liu, Fan Zhu, Dongwei Ren, Haoqian Wang, and Ling Shao. STAR: A Structure and Texture Aware Retinex Model. Submitted, 2019.
https://arxiv.org/abs/1906.06690

Yingjun Du, **Jun Xu**, Xiantong Zhen, Qiang Qiu, Ming-Ming Cheng. Conditional Variational Image Deraining. Submitted to IEEE Transactions on Image Processing (**TIP**), 2019.

Jun Xu*, Hui Li, Zhetong Liang, David Zhang, Lei Zhang. Real-world Noisy Image Denoising: A New Benchmark. https://arxiv.org/abs/1804.02603.

Wangpeng An, Haoqian Wang, Qingyun Sun, **Jun Xu**, Yi Luo, Lei Zhang. PID Controller based

Stochastic Optimization Acceleration for Deep Neural Networks. Major revision in **IEEE Transactions on Neural Networks and Learning Systems** (**TNNLS**).

Haoqian Wang, Zhiwei Xu, **Jun Xu**, Wangpeng An, Yongbing Zhang, Lei Zhang. Semi-supervised Self-growing Generative Adversarial Networks for Image Recognition. Submitted to **Pattern Recognition** (**PR**).

Yingkun Hou, **Jun Xu***. Edge-preserving Image Smoothing by Non-Local Pixel Filtering. In paper revision, to be submitted.

Conference Paper

Yingjun Du, **Jun Xu**, Qiang Qiu, Xiantong Zhen. Variational Image Deraining IEEE Winter Conference on Applications of Computer Vision (**WACV**), 2020.

Ziqin Wang, **Jun Xu***, Li Liu, Fan Zhu, and Ling Shao. RANet: Ranking Attention Network for Fast Video Object Segmentation. IEEE/CVF International Conference on Computer Vision (**ICCV**), 2019.

Jun Xu, Lei Zhang, David Zhang. A Trilateral Weighted Sparse Coding Scheme for Real-World Image Denoising. European Conference on Computer Vision (**ECCV**), 2018.

Jun Xu, Lei Zhang, David Zhang, Xiangchu Feng. Multi-channel Weighted Nuclear Norm Minimization for Real Color Image Denoising. IEEE International Conference on Computer Vision (**ICCV**), 2017.

Jun Xu, Lei Zhang, Wangmeng Zuo, David Zhang, Xiangchu Feng. Patch Group Based Nonlocal Self-Similarity Prior Learning for Image Denoising. IEEE International Conference on Computer Vision (**ICCV**), 2015.

Zhetong Liang, **Jun Xu**, David Zhang, Zisheng Cao, Lei Zhang. A Hybrid ℓ_1-ℓ_0 Layer Decomposition Model for Tone Mapping. IEEE Computer Vision and Pattern Recognition (**CVPR**), 2018.

Wangpeng An, Haoqian Wang, Qingyun Sun, **Jun Xu**, Lei Zhang, Qionghai Dai. A PID Controller Approach for Stochastic Optimization of Deep Networks. IEEE Computer Vision and Pattern Recognition (**CVPR**), 2018.

Jun Xu, Dongwei Ren, Lei Zhang, David Zhang. Patch Group based Bayesian Learning for Blind Image Denoising. Asian Conference on Computer Vision (**ACCV**) Workshop, 2016.

Zhou Xu, Shuai Li, Yutian Tang, Xiapu Luo, Tao Zhang, Jin Liu, **Jun Xu**. Cross Version Defect Prediction with Representative Data via Sparse Subset Selection. International Conference on Program Comprehension (**ICPC**), 2018.

Journal Paper

Jun Xu*, Mengyang Yu, Ling Shao, Wangmeng Zuo, Deyu Meng, Lei Zhang, David Zhang. Scaled Simplex Representation for Subspace Clustering. **IEEE Transaction on Cybernetics**, 2020. https://arxiv.org/abs/1807.09930.

Jun Xu, Wangpeng An, David Zhang, Lei Zhang. Sparse, Collaborative, or Nonnegative Representation: Which Helps Pattern Classification? Pattern Recognition (**PR**), vol. 88, pp. 679-688, Apr. 2019.

Jun Xu, Lei Zhang, David Zhang. External Prior Guided Internal Prior Learning for Real-world Noisy Image Denoising. IEEE Transactions on Image Processing (**TIP**), vol. 27, issue 6, pp. 2996-3010, June 2018.

Jun Xu, Kui Xu, Ke Chen, Jishou Ruan. Reweighted Sparse Subspace Clustering. Computer Vision and Image Understanding (**CVIU**), vol. 138, pp. 25-37, Sep. 2015.

Dongwei Ren, Wangmeng Zuo, David Zhang, **Jun Xu**, Lei Zhang. Partial Deconvolution with Inaccurate Blur Kernel. IEEE Transactions on Image Processing (**TIP**), vol. 27, issue 1, pp. 511-524, Jan. 2018.

Zhou Xu, Shuai Li, **Jun Xu**, Jin Liu, Xiapu Luo, Yifeng Zhang, Tao Zhang, Jacky Keung, Yutian Tang. LDFR: Learning Deep Feature Representation for Software Defect Prediction. Journal of Systems and Software, vol. 158, Dec., 2019.

Zhou Xu, Shuai Li, Xiapu Luo, Jin Liu, Tao Zhang, Yutian Tang, **Jun Xu**, Peipei Yuan, Jacky Keung. TSTSS: A Two-Stage Training Subset Selection Framework for Cross Version Defect Prediction. Journal of Systems and Software, vol. 154, pp. 59-78, Sep. 2019.

Yanping Zhang, **Jun Xu**, Wei Zheng, Chen Zhang, Xingye Qiu, Ke Chen, Jishou Ruan. newDNA-Prot: Prediction of DNA-binding proteins by employing support vector machine and a comprehensive sequence representation. Computational Biology and Chemistry, vol. 52, pp. 51-59, Oct. 2014.

PC Member / Reviewer

Conference:

- ICCV 2019
- CVPR 2019
- IJCAI 2019
- MICCAI 2019
- ACCV 2018/2016
- CCML 2017

Journal:

- IEEE Transactions on Neural Networks and Learning Systems (TNNLS)
- IEEE Transactions on Image Processing (TIP)
- IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)
- IEEE Transactions on Cybernetics (TCYB)
- IEEE Transactions on Multimedia (TMM)
- IEEE Access
- SIAM Journal on Imaging Sciences (SIIMS)
- Pattern Recognition (PR)
- Image and Vision Computing (IVC)
- IET Image Processing
- IET Computer Vision
- International Journal of Image and Graphics (IJIG)
- International Journal of Wavelets, Multiresolution and Information Processing
- Journal of Electronic Imaging (JEI)
- Journal of Visual Communication and Image Representation (JVCIR)
- Journal of the Franklin Institute
- Journal of Real-Time Image Processing
- Biophotonics

- Neurocomputing
- PLOS One
- Engineering Computations
- The Visual Computer

Honors and Awards

- Excellent Master Graduate, School of Mathematics Sciences, Nankai University, 2014
- National Scholarship for Outstanding Master Student, Ministry of Education, China, 2013