

Jun Liu

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Curriculum Vitae

Personal Data

Name: Jun Liu

Present Position: Associate Professor at Beijing Normal University, China

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Research Interests

- Variational and PDE-based image processing
- Numerical computing
- Deep learning and its applications
- Image processing applications

Education

Ph.D

Beijing Normal University, China

Sep. 2008 – Jun. 2011

Advisor: Prof. Haiyang Huang

M.S

Beijing Normal University, China

Sep. 2005 – Jun. 2008

Advisor: Prof. Zhongdan Huan

B.S

Hunan Normal University, China

Sep. 2000 – Jun. 2004

Positions

Associate Professor

Beijing Normal University, China

Sep. 2014 – Present

Assistant Professor

Beijing Normal University, China

Aug. 2011 – Aug. 2014

Visiting Scholar Experiences

Visiting Scholar

Hong Kong Baptist University, HK

Jan. 2020

Host: Prof. Xue-Cheng Tai

Visiting Scholar

UCLA, USA.

Jan. 2016 – Jan. 2017

Host: Prof. Stanley Osher.

Visiting Scholar

The Hong Kong University of Science & Technology, HK.

Aug. 2013 – Sep. 2013

Host: Prof. Shingyu Leung.

Visiting Scholar

The Hong Kong University of Science & Technology, HK.

Feb. 2012 – Feb. 2013

Host: Prof. Shingyu Leung.

Research Fellow

Nanyang Technological University, Singapore.

Jun. 2011 – Jul. 2011

Host: Prof. Xue-cheng Tai.

Visiting Student

Nanyang Technological University, Singapore.

May 2010 – Jul. 2010

Host: Prof. Xue-cheng Tai.

Honors and Awards

The Second-grade award of the Natural Science Award of the Ministry of Education of China 2013
(Liqiang Zhang, Bisheng Yang, **Jun Liu**, Tian Fang, Zhiqiang Xiao)

The named award for excellent doctor degree dissertation in China *2013*
Advisor: Prof. Haiyang Huang

The first-grade award of excellence person of Beijing Normal University *2013*

Research Grants

The National Key Research and Development Program of China **Co-investigator**
No. 2017YFA0604903-6 *2017 – 2022*

National Natural Science Foundation of China **Co-investigator**
No. 11871035 *2019 – 2022*

National Natural Science Foundation of China **Principal Investigator**
No. 11201032 *2013 – 2015*

Fundamental Research Funds for the Central Universities **Principal Investigator**
No. 2013YB55 *2013 – 2015*

National Natural Science Foundation of China **Co-investigator**
No. 11071023 *2011 – 2013*

Publication List (Selected)

- Shi Yan, Xue-Cheng Tai, **Jun Liu**, Hai-yang Huang. Convexity Shape Prior for Level Set based Image Segmentation Method. *IEEE Transactions on Image Processing*. to appear.
- Fan Jia, Xue-Cheng Tai, **Jun Liu**. Nonlocal Regularized CNN for Image Segmentation. *Inverse Problems & Imaging*, to appear.

- Haifeng Li, **Jun Liu**, Li Cui, Haiyang Huang, Xue-Cheng Tai. Volume Preserving Image Segmentation with Entropic Regularization Optimal Transport and Its Applications in Deep Learning. *Journal of Visual Communication and Image Representation*. to appear.
- Wei Wan, Weihong Guo, Haiyang Huang, **Jun Liu**. Non-negative and Non-Local Sparse Tensor Factorization Based Hyperspectral Image Super-resolution. *IEEE Transactions on Geoscience and Remote Sensing*, to appear.
- Fan Jia, **Jun Liu**, and Xue-Cheng Tai. A Regularized Convolutional Neural Network for Semantic Image Segmentation. *Analysis and Applications*, to appear.
- Faqiang Wang, Cuicui Zhao, **Jun Liu**, Haiyang Huang. A Variational Image Segmentation Model based on Normalized Cut with Adaptive Similarity and Spatial Regularization. *SIAM Journal on Imaging Sciences*, (2020) 13(2): 651-684.
- Faqiang Wang, Haiyang Huang, **Jun Liu**. Variational based Mixed Noise Removal with CNN Deep Learning Regularization. *IEEE Transactions on Image Processing*. (2020) 29(1): 1246-1258.
- Wei Wan, Weihong Guo, **Jun Liu**, Haiyang Huang. Non-local Blind Hyperspectral Image Super-resolution via 4D Sparse Tensor Factorization and Low-rank. *Inverse Problems & Imaging*. (2020) 14(2):339-361.
- Shi Yan, **Jun Liu**, Haiyang Huang, Xue-Cheng Tai. A Dual EM Algorithm for TV Regularized Gaussian Mixture Model in Image Segmentation. *Inverse Problems & Imaging*. (2019) 13(3): 653-677.
- **Jun Liu**, Stanley Osher. Block Matching Local SVD Operator Based Sparsity and TV Regularization for Image Denoising. *Journal of Scientific Computing*. (2019) 78(1): 607-624.
- Wei Wan, Haiyang Huang, **Jun Liu**, Local Block Operators and TV Regularization based Image Inpainting. *Inverse Problems and Imaging*. (2018) 12(6): 1389-1410.
- Shi Yan, Zihao Yu, **Jun Liu**, Non-parametric Mixture Model with TV Spatial Regularisation and Its Dual Expectation Maximisation Algorithm. *IET Image Processing*. (2018) 12(9): 1655-1662.
- **Jun Liu** Xiaojun Zheng. A Block Nonlocal TV Method for Image Restoration. *SIAM Journal on Imaging Sciences*. (2017) 10(2):920-941.
- Yuebin Wang, Liqiang Zhang, Hao Deng, Jiwen Lu, Haiyang Huang, Liang Zhang, **Jun Liu**, Hong Tang, Xiaoyue Xing. Learning a Discriminative Distance Metric with Label Consistency for Scene Classification. *IEEE Transactions on Geoscience & Remote Sensing*. (2017) 55(8):4427-4440.
- **Jun Liu**, Xue-cheng Tai, Shingyu Leung, Haiyang Huang. A New Continuous Max-flow Algorithm for Multiphase Image Segmentation using Super-level Set Functions. *Journal of Visual Communication and Image Representation*. (2014) 25(6): 1472-1488.
- **Jun Liu**, Xue-cheng Tai, Shingyu Leung. A Generic Convexification and Graph Cut Method for Multiphase Image Segmentation. *Energy Minimization Methods in Computer Vision and Pattern Recognition Lecture Notes in Computer Science*. (2013) 8081: 251-265.
- **Jun Liu**, Haili Zhang. Image Segmentation Using a Local GMM in a Variational Framework. *Journal of Mathematical Image and Vision*. (2013) 46(2): 161-176.
- **Jun Liu**, Xue-cheng Tai, Haiyang Huang, Zhongdan Huan. A Weighted Dictionary Learning Model for Denoising Images Corrupted by Mixed Noise. *IEEE Transactions on Image Processing*. (2013) 22(3): 1108-1120.
- **Jun Liu**, Shingyu Leung. A Splitting Algorithm for Image Segmentation on Manifolds Represented by Grid Based Particle Method. *Journal of Scientific Computing*. (2013) 56(2): 243-266.

- **Jun Liu**, Yin-Bon Ku, Shingyu Leung. Expectation-maximization algorithm with total variation regularization for vector-valued image segmentation. *Journal of Visual Communication and Image Representation*. (2012) 23(8): 1234-1244.
- **Jun Liu**, Xue-cheng Tai, Haiyang Huang, Zhongdan Huan. Simultaneous Denoising and Illumination Correction via Local Data-Fidelity and Nonlocal Regularization. *Scale Space and Variational Methods in Computer Vision Lecture Notes in Computer Science*. (2012) 6667:218-230.
- **Jun Liu**, Xue-cheng Tai, Haiyang Huang, Zhongdan Huan. A Fast Segmentation Method Based on Constraint Optimization and Its Applications: Intensity Inhomogeneity and Texture Segmentation. *Pattern Recognition*. (2011) 44(9):2093-2108.
- **Jun Liu**, Zhongdan Huan, Haiyang Huang. Image Restoration under Mixed Noise Using Globally Convex Segmentation. *Journal of Visual Communication and Image Representation*. (2011) 22 (3) : 263-270.
- Qinghua Liu, Huiliang Wang, **Jun Liu**, Haiyang Huang. AFM Image Processing for Estimating the Number and Volume of Nanoparticles on a Rough Surface. *Surface and Interface Analysis*. (2011) 43(10): 1354-1359.
- **Jun Liu**, Haiyang Huang, Zhongdan Huan, Haili Zhang. Adaptive Variational Method for Restoring Color Images with High Density Impulse Noise. *International Journal of Computer Vision*. (2010) 90 (2): 131-149.
- **Jun Liu**, Zhongdan Huan, Haiyang Huang, and Haili Zhang. An Adaptive Method for Recovering Image from Mixed Noisy Data. *International Journal of Computer Vision*. (2009) 85 (2): 182-191.