Jianzhe LIN

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Education

University of Chinese Academy of Sciences | Xi'an, China | Sep. 2013-June 2016
Major in Signal and Information Processing; GPA: 3.44/4.00
Master of Science (July 2016)

Huazhong University of Science and Technology | Wuhan, China | Sep. 2009-June 2013
Major in Optoelectronic Information Engineering; Second Major in English; GPA: 3.57/4.00
Bachelor of Engineering & Bachelor of Arts (June 2013)

Research Experiences

Theory and Application for Precision Processing and Intelligent Spatial Information Transformation of High Resolution Remote Sensing Satellite Data 2014-Present
Team Leader

- Key Project of Chinese National Programs for Fundamental Research and Development;
- Work as team leader of the fifth research group;
- Have finished project production, monograph redaction, and achievement exhibition;
- Have developed the online retrieval service platform. The user can retrieval the objective by semantic keywords and the feedback can update the training information by active learning model;
- The accuracy of automatic reconstruction and detection for eight artificial types of objects including various city paths and buildings achieved by the proposed system reaches 90%

Hyperspectral Image Classification via Multi-Task Joint Sparse Representation and Stepwise MRF Optimization 2014-Present
Researcher

- A novel spectral-spatial classification scheme is proposed; mainly focuses on multi-task joint sparse representation and a stepwise markov random filed framework, which are claimed to be two main contributions in this procedure;
- The experimental results on Indian Pines and Pavia University demonstrate the superiority of our method compared with the state of the art competitors

Dual Clustering Based Hyperspectral Band Selection by Contextual Analysis 2014-Present
Researcher

- Have tackled the inherent drawbacks of clustering based band selection method through a new framework concerning on dual clustering;
- Contributions: 1) A novel descriptor that reveals the context of HSI efficiently. 2) A dual clustering method that includes the contextual information in the clustering process. 3) A new strategy that selects the cluster representatives jointly considering the mutual effects of each cluster;

- Experimental results on three real world hyperspectral images verify the noticeable accuracy of the proposed method, with regard to the HSI classification application

Salient Band Selection for Hyperspectral Image Classification via Mainfold Ranking 2014-Present
Researcher

- Define saliency in a context and the salient band selection in HSI is introduced as an example;
- The method is proposed to eliminate the drawbacks of traditional salient band selection methods by manifold ranking to solve the problem of inappropriate measurement of band difference;
- To justify the effectiveness of the proposed method, experiments are conducted on three hyperspectral images and our method is compared with six existing competitors. Results show that the proposed method is very effective and can achieve the best performance among the competitors

In Defense of Iterated Conditional Mode for Hyperspectral Image Classification 2013-2014
Researcher

- Mainly focus on the Markov Random Fields related paradigm, which involves a demanding energy minimization procedure;
- Method is in defense of a simple yet efficient method for hyperspectral image classification, Iterated Conditional Mode, which has been generally considered inferior to other state-of-the-art methods;
- Have tackled two inherent drawbacks of ICM, sensitive label initialization and local minimum;
- Method is applied to three real-world hyperspectral images and results are compared with those of state-of-the-art methods; comparisons show that the proposed method outperforms its competitors

Publications

- **J.Lin**, Q. Wang, and Y. Yuan, "In defense of iterated conditional mode for hyperspectral image classification,"in *Proc.IEEE International Conference on Multimedia & Expo*, pp.1-6, 2014.
- Q. Wang, **J. Lin**, and Y. Yuan, "Salient Band Selection for Hyperspectral Image Classification via Mainfold Ranking," *IEEE Trans. Neural Networks and Learning Systems*, accepted.
- Y. Yuan, **J. Lin**, and Q. Wang, "Hyperspectral Image Classification via Multi-Task Joint Sparse Representation and Stepwise MRF Optimization," *IEEE Trans*. *Cybernetic,* accepted.
- Y. Yuan, **J. Lin**, and Q. Wang, "Dual Clustering Based Hyperspectral Band Selection by Contextual Analysis," *IEEE Trans. Geoscience and Remote Sensing*, accepted.
- Y. Yuan, **J. Lin** and Q. Wang, "Active Learning by Querying the Salient examples for Hyperspectral Image" *IEEE Trans. Geoscience and Remote Sensing*, submitted.

Other Qualifications and Skills

- IEEE Student Member | 2015;
- Regular Reviewer for *Big Data Analytics* | 2015
- Regular Reviewer for *Neurocomputing* | 2015;
- Individual Scholarship (for academic progress) | 2013;
- Individual Scholarship (for full mark of calculus test) | 2009;
- National Computer Rank Examination (certificate of level 4): Network Engineering | 2012
- National Computer Rank Examination (certificate of level 3): Software Engineering | 2011
- Program: Proficient in Matlab, AI, LaTex, grasp C/C++, PS, OpenGL, github, HTML;
- Language: Chinese (Native), Proficient in English