Su-Jing Wang

Post-Doctoral Fellow

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RESEARCH INTERESTS

My research interests are machine learning, pattern recognition. I like to apply dimensionality reduction algorithms for micro-expression recognition, face recognition, biometrics, etc. My other areas of interest are manifold learning, tensor analysis, sparse representation.

EDUCATIONS

1. Ph.D., Computer Science, Jilin University, China, 2008 – 2012
   Thesis Title: "*Tensor Subspace on Manifold for Face Recognition*"
2. M.Sc., Software Engineering, Jilin University, China, 2005 – 2007
   Thesis Title: "*Research the Application of Concept Lattice in Data Mining*"
3. B.Sc., Computer Science, Huaihai Institute of Technology, China, 1999 - 2002

PROFESSORNAL ACTIVITY

Conference Activity

One of Ten Selectees of the Doctoral Consortium at International Joint Conference on Biometrics 2011

Reviewer

Optics Express

PLoS ONE

Neural Computing and Applications (springer)

IEEE Transactions on Image Processing

Journal International Journal of Machine Learning and Cybernetics (springer)

Neurocomputing (elsevier)

IEEE Transactions on Pattern Analysis and Machine Intelligence

Pattern Recognition Letters (elsevier)

IEEE Signal Processing Letters

Knowledge-based Systems (elsevier)

IEEE Transactions on Neural Networks

Neural Processing Letters (springer)

SELECTED PUBLICATIONS

Journal Articles:

1. **Su-Jing Wang**, Shuicheng Yan, Jian Yang, Chun-Guang Zhou, Xiaolan Fu. *A General Exponential Framework for Dimensionality Reduction*. IEEE Transactions on Image Processing. 2014. 23(2): 920-930. DOI:10.1109/TIP.2013.2297020.
2. **Su-Jing Wang**, Hui-Ling Chen, Wen-Jing Yan, Yu-Hsin Chen, Xiaolan Fu. *Face recognition and micro-expression recognition based on discriminant tensor subspace analysis plus extreme learning machine*. Neural Processing Letters. 2014. 39(1): 25-43. DOI:10.1007/s11063-013-9288-7.
3. **Su-Jing Wang**, Chun-Guang Zhou, Xiaolan Fu. *Fusion Tensor Subspace Transformation Framework*. PLoS ONE. 2013. 8(7): e66647. DOI:10.1371/journal.pone.0066647
4. **Su-Jing Wang,** Jian Yang, Ming-Fang Sun, Xu-Jun Peng, Ming-Ming Sun, Chun-Guang Zhou. *Sparse Tensor Discriminant Color Space for Face Verification*. IEEE Transactions on Neural Networks and Learning Systems. 2012. 23(6): 876-888. DOI:10.1109/TNNLS.2012.2191620.
5. **Su-Jing Wang**, Jian Yang, Na Zhang, Chun-Guang Zhou. *Tensor Discriminant Color Space for Face Recognition*. IEEE Transactions on Image Processing. 2011. 20(9):2490-2501. DOI:10.1109/TIP.2011.2121084.
6. **Su-Jing Wang**, Hui-Ling Chen, Xu-Jun Peng, Chun-Guang Zhou. *Exponential locality preserving projections for small sample size problem*. Neurocomputing. 2011,74(17):3654-3662.DOI:10.1016/j.neucom.2011.07.007
7. **Su-Jing Wang**, Chun-Guang Zhou, Na Zhang, Xu-Jun Peng, Yu-Hsin Chen, Xiao-Hua Liu. *Face recognition using second order discriminant tensor subspace analysis*, Neurocomputing. 2011, 74(12-13):2142-2156. DOI:10.1016/j.neucom.2011.01.024.
8. **Su-Jing Wang**, Chun-Guang Zhou, Yu-Hsin Chen, Xu-Jun Peng, Hui-Ling Chen, Gang Wang, Xiaohua Liu. *A novel face recognition method based on sub-pattern and tensor*. Neurocomputing. 2011.74(17): 3553-3564. DOI:10.1016/j.neucom.2011.06.017
9. **Su-Jing Wang**, Chun-Guang Zhou, Ming-Fang Sun, Hui-Ling Chen, Xiao-Hua Liu, Xu-Jun Peng. *Can Estimate Age Range Using 'a Face a Person'?*. Journal of Computational Information Systems. 2011. 7(13): p.4586-4593.
10. **Su-Jing Wang**, Na Zhang, Xu-Jun Peng, Chun-Guang Zhou. *Two-dimensional locality preserving projection based on maximum scatter difference*. Journal of Information & Computational Science. 2011, 8(3):484-494.
11. Wen-Jing Yan, **Su-Jing Wang**, Yong-Jing Liu, Qi Wu, Xiaolan Fu. For Micro-expression Recognition: Database and Suggestions. Neurocomputing. 2014. (in press)
12. Wen-Jing Yan, Xiaobai Li, **Su-Jing Wang**, Guoying Zhao, Yong-Jing Liu, Yu-Hsin Chen, Xiaolan Fu. *CASME II: An Improved Spontaneous Micro-expression Database and the Baseline Evaluation*. PLoS ONE. DOI: 10.1371/journal.pone.0086041. (in press)
13. Cheng-Cheng Jia, **Su-Jing Wang**, Xu-Jun Peng, Wei Pang, Can-Yan Zhang, Chun-Guang Zhou, Zhe-Zhou Yu. *Incremental multi-linear discriminant analysis*

using canonical correlations for action recognition. Neurocomputing. 2012, 83(16):56-63. DOI:10.1016/j.neucom.2011.11.006.

14. Yuanning Liu, Gang Wang, Huiling Chen, Hao Dong, Xiaodong Zhu, **Su-Jing Wang**. *An Improved Particle Swarm Optimization for Feature Selection*. Journal of Bionic Engineering, 2011, 8(2): 191-200, DOI:10.1016/S1672-6529(11)60020-6.
15. Hui-Ling Chen, Bo Yang, Gang Wang, Jie Liu, Xin Xu, **Su-Jing Wang**, Da-You Liu. *A novel bankruptcy prediction model based on an adaptive fuzzy k-nearest neighbor method*. Knowledge-Based Systems, 2011, 24(8): 1348-1359, Doi:10.1016/j.knosys.2011.06.008.
16. Hui-Ling Chen, Chang-Cheng Huang, Xin-Gang Yu, Xin Xu, Xin Sun, Gang Wang, **Su-Jing Wang**. *An efficient diagnosis system for detection of Parkinson's disease using fuzzy k-nearest neighbor approach*. Expert Systems with Applications, 2013, 40(1): 263-271, DOI:10.1016/j.eswa.2012.07.014.
17. Hui-Ling Chen, Bo Yang, Gang Wang, **Su-Jing Wang**, Jie Liu, Da-You Liu. *Support Vector Machine Based Diagnostic System for Breast Cancer Using Swarm Intelligence*. Journal of Medical Systems, 2012, 36(4): 2505-2519, DOI:10.1007/s10916-011-9723-0.

Conference Papers:

1. **Su-Jing Wang**, Ming-Fang Sun, Yu-Hsin Chen, Er-Ping Pang, Chun-Guang Zhou. *STPCA: Sparse Tensor Principal Component Analysis for Feature Extraction*. The 21st International Conference on Pattern Recognition. 2012. p. 2278-2281.
2. Wen-Jing Yan, Qi Wu, Yong-Jing Liu, **Su-Jing Wang**, Xiaolan Fu. *CASME Database: A dataset of spontaneous micro-Expressions Collected From Neutralized Faces*. The 10th IEEE Conference on Automatic Face and Gesture Recognition (FG), Shanghai, China, 2013. p. 1-7
3. **Su-Jing Wang**, Cheng-Cheng Jia, Hui-Ling Chen, Chun-Guang Zhou. *Matrix Exponential LPP for Face Recognition.* The First Asian Conference on Pattern Recognition. 2011. p. 189-193.
4. Ming-Fang Sun, **Su-Jing Wang**, Xiao-Hua Liu, Cheng-Cheng Jia and Chun-Guang Zhou. *Human Action Recognition Using Tensor Principal Component Analysis*. 4th IEEE International Conference on Computer Science and Information Technology. 2011, p.487-491.
5. **Su-Jing Wang**, Na Zhang, Ming-Fang Sun, Chun-Guang Zhou. *The analysis of parameters t and k of LPP on several famous face databases*. The Second International Conference on Swarm Intelligence. 2011, p. 333-339.
6. Hui-Ling Chen, Da-You Liu, Bo Yang, Jie Liu, Gang Wang and **Su-Jing Wang**. *An Adaptive Fuzzy k-Nearest Neighbor Method Based on Parallel Particle Swarm Optimization for Bankruptcy Prediction*. PAKDD 2011, Part I, LNAI 6634, p. 249-264.
7. **Su-Jing Wang**, De-Cai Zhang, Cheng-Cheng Jia, Na Zhang, Chun-Guang Zhou, Li-Biao Zhang. *A sign language recognition based on tensor*. 2010 Second International Conference on MultiMedia and Information Technology (MMIT 2010) 2010 Second International Conference on. 2010. p. 192-195.

8. **Su-Jing Wang**, Zhen Chen, Dong-Jing Wang. *An algorithm based on concept-matrix for building concept lattice with hasse*. 2007 International Conference on Wireless Communications, Networking and Mobile Computing, Proceedings-Volume 8, September 21-25, 2007. p. 5588-5591.

PROJECTS

- Micro-expression Recognition Based on Sparse Tensor, Supported by the National Natural Science Foundation of China, Grant 61379095, Jan 2014-Dec 2017, Principal researcher.
- Tensor Presentation and Feature Extraction of Color Micro-expression Video, Supported by the China Postdoctoral Science Foundation, Grant 2012M520428, Aug 2012-Aug 2014, Principal researcher.
- Sparse Presentation of Color Micro-expression Video, Supported by the Key Laboratory of Symbolic Computation and Knowledge Engineering of Ministry of Education, Jilin University. Grant 93K172013K04, Jan 2013-Dec 2014, Principal researcher.
- Texture Extraction and Sparse P Presentation of Color Micro-expression Video, Supported by the National Laboratory of Pattern Recognition. Grant 201306295, Jan 2014-Dec 2015, Principal researcher.

AWARDS & HORNORS

1. IBM Chinese Outstanding Students Scholarship, 2011
2. Twenty-fifth Graduate "Elite Cup" Academic Achievements Contest First Prize of Jilin University, 2011
3. The Second Scholarship for Excellent Postgraduate Student of Jilin University, 2009
4. Excellent Postgraduate Student of Jilin University, 2009
5. Productive Worker of Jiangsu, 2004
6. The Spiritual Role Model in Jiangsu Province, 2001
7. "Ten Outstanding Youths" of Lianyungang City, 2001
8. Excellent Student of Huaihai Institute of Technology, 2001
9. Productive Worker of Lianyungang City, 2001
10. The National Self-educated Workers and Staff Award, 2000
11. The Self-educated Workers and Staff of Jiangsu Award, 1999
12. The Top Ten Role Models in Lianyungang City, 1999
13. Excellent Graduate Student of Jiangsu Radio & TV University, 1997
14. The First National College Computer Competition Finals Memorial Award, 1997

MY STORY [http://www.china.org.cn/china/2012-01/10/content_24366458.htm]

For most of us, life is a struggle. But for Su-Jing Wang, overcoming tremendous physical disability to become one of the stars of Chinese academia has been a lifelong endeavor.

From disabled child to post-graduate student and then Ph.D. candidate, Wang's intelligence and perseverance has earned him the title of the "Chinese Stephen Hawking."

Born in 1976, Wang's mother suffered complications in childbirth, which cut off oxygen to Wang's brain, leaving him with permanent brain damage that left him disabled. Although he cannot stand upright on his legs, cannot write by his hands, and cannot eat by himself, Wang never gave up his dream of pursuing advanced study in engineering and mathematics.

In order to hold a pen to write and prevent his body from shaking, he does exercises to grasp chess and ties sandbags under his knees. With practice he is able to use a mouse and keyboard with his left hand. Exams are much more difficult; his handwriting is so slow that he often cannot finish the test on time.

n middle school, Wang began to learn computer programming, and gradually he found he was fascinated by it. In 1997, his program for the CASL assembly language compiler was selected to compete in the finals of the China College Student Computer Competition. Wang had the opportunity to meet Chinese former Vice Premier Zou Jiahua.

With Zou's help, Wang was given special permission to attend Jilin University as a postgraduate student. In 2008, after graduating with a master's degree, he continued on to study for his Ph.D.

To date, Wang has published at least 20 papers under the guidance of his academic tutor. In 2009, he was nominated as the "Chinese College Student of the Year", in 2000, he was recognized as an "Elite Self-Taught Worker" throughout the country, and when he was 22 years old, he became the country's youngest process engineer.

In October 2011, Wang was invited to the Doctoral Consortium of the International Conference on Biometrics held in Washington D.C., where he was recognized as one of the ten most promising doctoral students in the world.

In his tutor and classmates' eyes, Wang is a man of incredible perseverance. He cannot move his body, but he can move his mind; he cannot do simple things like others, but he is always positive, optimistic and outgoing. In order to improve himself, he also seizes every chance to communicate with professors and experts through the internet.

Recently, Wang's latest target is to find a job after graduation. He wants to be a university teacher. He has already sent his resume to several colleges. He hopes to one day have the capability to support himself and his family, and to help others like him to strive for a better life.