

Xin Fan

Curriculum Vitae

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Experiences

- 2015.7–Now **Duty dean**, *DUT-RU International School of Software Information Technology*, Dalian University of Technology (DUT), P.R.China.
- 2015.7–Now **Vice dean**, *School of Software Technology*, Dalian University of Technology (DUT), P.R.China.
- 2012.7–2015.7 **Department head**, *School of Software Technology*, Dalian University of Technology (DUT), P.R.China.
- 2015.12–Now **Professor**, *School of Software Technology*, Dalian University of Technology (DUT), P.R.China.
- 2009.11–2015.11 **Associate Professor**, *School of Software Technology*, Dalian University of Technology (DUT), P.R.China.
- 2005.7–2009.10 **Assistant professor (Lecturer)**, *College of Information Engineering*, Dalian Maritime University(DMU), P.R.China.
- 2008.1–2009.6 **Postdoctoral research fellow**, *University of Texas Southwestern Medical Center*, USA.
- 2006.5–2007.12 **Postdoctoral research fellow**, *Oklahoma State University*, USA.

Education

- 2004.11 **Ph.D. in Information and Communication Engineering**, Xi'an Jiaotong University, P.R.China.
Advisor: Prof. Dequn Liang and Prof. Chun Qi.
- 2003.09–2007.06 **B.E. in Information and Communication Engineering**, Xi'an Jiaotong University, Xi'an, P.R.China.

Teaching Courses

The C programming language, object-oriented programming using C++, signal processing, and computer vision.

Research Projects

- 2016.1–2019.12 **Example learning for data driven image processing**, Natural Science Foundation, China, Principal Investigator.

- 2012.1–2015.12 **Image processing and statistical analysis on pediatric DTI for cognitive evolution**, Natural Science Foundation, China, Principal Investigator.
- 2012.1–2014.12 **Research on cognitive evolution and graphical models for object tracking and recognition**, Ministry of Education, China, Principal Investigator.
- 2011.1–2014.12 **Theory and applications of image invariant features based on cognitive models**, Natural Science Foundation, China, Investigator.
- 2011.1–2013.12 **Joint object tracking and recognition based on hierarchical generative models**, Natural Science Foundation, China, Principal Investigator.
- 2008.1–2009.6 **Computational Issues in Diffusion Tensor Magnetic Resonance Imaging (DT-MRI)**, NIH, USA, Investigator.
- 2008.1–2010.12 **Video/image super-resolution with non-linear learning**, Natural Science Foundation of China, CO-PI.
- 2005.9–2007.12 **Video Based Intelligent Traffic Surveillance**, Ministry of Science & Technology of China, CO-PI.
- 2006.5–2007.12 **Target Detection, Tracking, Classification and Learning**, Army Research Office, USA, Investigator.

Professional Services

Journal Reviews

IEEE Transactions on Image Processing, IEEE Transactions on Pattern Analysis and Machine Intelligence, IEEE Transactions on Circuit Systems and Video Technology, IEEE Transactions on Intelligent Transportation Systems, Signal Processing, Computer Vision and Image Understanding, Neurocomputing, IEEE Journal of Biomedical and Health Informatics, Journal of Electronics, Journal of Automation, Journal of Electronics and Information, Chinese Journal of Computers

Invited Talks

- 2015.10 Characteristic number and its applications to shape analysis, Waterloo University, Canada
- 2015.7 Characteristic number regression for facial landmark localization, Dalian Maritime University, China
- 2015.6 Characteristic number and its applications to shape analysis, Jilin University, China
- 2015.4 Characteristic number for 3D/2D facial landmark localization, State University of New York at Stony Brook, USA
- 2014.10 Characteristic number and its applications to shape analysis, Ritsumeikan University, Japan
- 2014.5 Characteristic number and its applications to shape analysis, Inha University, Korea
- 2013.5 Regression models for low level image processing, Beijing University of Technology, China
- 2012.11 Haze filtering with aerial perspective, Southern China University of Technology, China
- 2007.11 Graphical models in computer vision, The Schepens Eye Research Institute, Harvard Medical School, USA

Honors

- 2015.7 Best Student Paper Award from ICME 2015
- 2011 Award for New Century Excellent Talents, Ministry of Education, China
- 2011 Liaoning Hundreds/Thousands Talents.
- 2012 Provincial Science and Technology Progress Award, LiaoNing.
- 2001 Municipal Science and Technology Progress Award, Dalian.

Publications

2016

- [1]. **Xin Fan***, Yi Wang, Renjie Gao, and Zhongxuan Luo. Haze filtering with natural transmission. *The Visual Computer*, 2016, 32(1): 137–147. (SCI, EI)
- [2]. Qi Jia, **Xin Fan***, Yu Liu, Haojie Li, Zhongxuan Luo, and He Guo. Hierarchical projective invariant contexts for shape recognition. *Pattern Recognition*, 2016, 52: 358-374. (SCI, EI)
- [3]. **Xin Fan***, Zhi Chai, Yuyao Feng, Yi Wang, Shengfa Wang, and Zhongxuan Luo. An Efficient Mesh-based Face Beautifier on Mobile Devices. *Neurocomputing*, 2016, 172: 134-142. (SCI, EI)

2015

- [4]. **Xin Fan***, Yuyao Feng, Zhi Chai, David Xianfeng Gu, and Zhongxuan Luo. Image Morphing with Conformal Welding. *The Visual Computer*, 2015, DOI: 10.1007/s00371-015-1188-6. (SCI, EI)
- [5]. Meng Pang, Chuang Lin, Risheng Liu, **Xin Fan***, and Jifeng Jiang. Sparse concept based discriminant matrix factorization for image representation. *IEEE Conference on Image Processing (ICIP)*, 2015. (Oral, Top 10% paper over 2000+ submissions)
- [6]. Binghui Wang, Risheng Liu, Chuang Li, and **Xin Fan***. Matrix Factorization with Column L0-norm Constraint for Robust Multi-subspace Analysis. *Proc. of International Conference on Data Mining Workshops (ICDMW)*, 2015.
- [7]. Qi Jia, **Xin Fan***, Zhongxuan Luo, Haojie Li, Kang Huyan, and Zezhou Li. Cross-view Action Matching Using a Novel Projective Invariant on Non-coplanar Space-time points. *Multimedia Tools and Application*, 2015, DOI: 10.1007/s11042-015-2704-4. (SCI,EI).
- [8]. Ying Wang, Peng Fei, **Xin Fan***, and Haojie Li. Face recognition using nonlinear locality preserving with deep networks. *Proceedings of the 7th International Conference on Internet Multimedia Computing and Service (ICIMCS)*, 2015
- [9]. Qi Jia, Xinkai Gao, Zhongxuan Luo, **Xin Fan***, and He Guo. Feature points matching based on geometric constraints. *Journal of Computer-Aided Design and Computer Graphics*. 2015, 27(8):1389-1398, in Chinese. (EI).
- [10]. Yuntao Li, **Xin Fan***, Risheng Liu, Yuyao Feng, Zhongxuan Luo, and Zezhou Li. Characteristic number regression for facial feature extraction. *IEEE International Conference on Multimedia and Expo (ICME)*, 2015. (Oral, 15%, **Best student paper award**)
- [11]. Pingjun Chen, **Xin Fan***, Ruiyang Liu, Xianxuan Tang, and Hua Cheng. Fiber segmentation using a density-peaks clustering algorithm. *International Symposium on Biomedical Imaging (ISBI)*, 2015.

- [12]. Yi Wang, Juncheng Liu, **Xin Fan***, Xiangjian He, Qi Jia, and Renjie Gao. Online Gesture-based Interaction with Visual Oriental Characters based on Manifold Learning. *Signal Processing*, 2015,110: 123-131.(SCI, EI)
- [13]. **Xin Fan***, Hao Wang, Zhongxuan Luo, Yuntao Li, Wenyu Hu, and Daiyun Luo. Fiducial facial feature extraction using a novel projective invariant. *IEEE Transactions on Image Processing*, 2015, 24(3): 1164-1177. (SCI, EI)
- [14]. Qi jia, Yu Liu, **Xin Fan***, He Guo, and Xinkai Gao. Shape matching using hierarchical cross ratio contexts. *Journal of Computer-Aided Design and Computer Graphics*. 2015(12):2247-2255, in Chinese. (EI).

2014

- [15]. Jieli Zhang, Jing Xu, Zhongxuan Luo, and **Xin Fan***. Hierarchical Matching of 3D Shape Based on Heat Kernel Signature. 2014, 26(12): 2142-2148. (EI)
- [16]. Renjie Gao, Yi Wang, Min Liu, and **Xin Fan***. Fast algorithm for Dark Channel Prior. *Electronics Letters*, 2014, 50(24):1826-1828. (SCI, EI).
- [17]. Bin Liu, Xianyong Jia, Hui Zhang, **Xin Fan**, and Chao Wan. Segmentation of Pediatric Diffusion Tensor Magnetic Resonance Imaging Images Based on Adaptive Mean Shift Clustering Method *Journal of Medical Imaging and Health Informatics*, 2014, 4(6): 901-906. (SCI).
- [18]. **Xin Fan***, Renjie Gao, and Yi Wang. Example-based Haze Removal with two-layer Gaussian Process Regressions. *Pacific Conference on Computer Graphics and Applications (PG)*, 2014.
- [19]. **Xin Fan**, Zhongxuan Luo*, Jieli Zhang, Xinchun Zhou, Qi Jia, and Daiyun Luo. Characteristic Number: Theory and Its Application to Shape Analysis. *Axioms*, 2014, 3(2): 202-221. (<http://www.mdpi.com/2075-1680/3/2/202>).
- [20]. Hao Wang, **Xin Fan***, and Yuntao Li. Fiducial Facial Point Extraction with Cross Ratio. *Proc. of IEEE International Conference on Image Processing (ICIP)*, 2014..
- [21]. Binghui Wang, Chuang Lin, **Xin Fan**. Hierarchical Bayes based Adaptive Sparsity in Gaussian Mixture Model. *Pattern Recognition Letters*, 2014, 49(1):238-247. (SCI, EI).
- [22]. Wenyu Hu, Zhongxuan Luo, and **Xin Fan***. Image Retargeting via Adaptive Scaling with Geometry Preservation. *IEEE Journal on Emerging and Selected Topics in Circuits and Systems (JETCAS)*, 2014, 4(1):70-81. (SCI, EI).
- [23]. Qi Jia, **Xin Fan***, Zhongxuan Luo, Yu Liu, and He Guo. A New Geometric Descriptor for Symbols with Affine Deformations. *Pattern Recognition Letters*, 2014, 40(4):128-135. (SCI, EI).
- [24]. Wanfeng Qi, Zhongxuan Luo, **Xin Fan**. Approximation-subdivision-based Induced subdivision scheme. *Science in China: Mathematics* , 2014, 44(7): 755-768..
- [25]. Qi jia, Yu Liu, He Guo, **Xin Fan**, and Yuxin Wang. Shape matching using metric partition constrains. In *Journal of Computer-Aided Design and Computer Graphics*. 2014, 26(1):65-71, in Chinese. (EI)
- [26]. Zhongxuan Luo, Daiyun Luo, **Xin Fan***, Haojie Li. Shape matching method under projective transformation . *Journal of Computer-Aided Design and Computer Graphics*, 2014, 26(4):559-565, in Chinese. (EI).

2013

- [27]. Qi jia, Xiaoyu Tian, **Xin Fan***, Zhongxuan Luo, and He Guo. Planar object recognition based on characteristic ratio. *Computer Research and Development*. 2013, 50(9):1883-1892, in Chinese. (EI).
- [28]. Zhongxuan Luo, Daiyun Luo, **Xin Fan***, Haojie Li. A shape matching method under projective transformation . *The ninth session of the harmonious human environment conference (HHME2013)*. (**Best paper award**).
- [29]. Zhi Chai, Yuyao Feng, **Xin Fan***, Yi Wang, Zhongxuan Luo, and Shengfa Wang. Efficient Mesh-based Face Beautifier on Mobile Devices. *Proc. of ICIMCS*, 2013. (EI).

- [30]. Binghui Wang, Meng Pang, Chuang Lin, **Xin Fan***. Graph Regularized Non-negative Matrix Factorization with Sparse Coding. *IEEE Conf. ChinaSIP 2013*, pp. 476-480. (EI).
- [31]. Yi Wang, Zhongxuan Luo, Juncheng Liu, **Xin Fan***, Haojie Li, and Yunzhen Wu. Real-time Estimation of Hand Gestures based on Manifold Learning from Monocular Videos. *Multimedia Tools and Applications*, 2013, 71(2):555-574. (SCI, EI).
- [32]. Zhongxuan Luo, Daiyun Luo, **Xin Fan**, Xinchun Zhou, and Qi Jia. A Shape Descriptor Based on New Projective Invariants. *International Conference on Image Processing (ICIP)*, 2013. (EI).
- [33]. Yu Liu, Qi Jia, He Guo, and **Xin Fan**. A Shape Matching Framework Using Metric Partition Constraint. *International Conference on Image Processing (ICIP)*, 2013. (EI).

2012

- [34]. Vijay Venkataraman, Guoliang Fan, Joseph P. Havlicek, **Xin Fan**, Yan Zhai, and Mark Yeary. Adaptive Kalman Filtering for Histogram-based Appearance Learning in Infrared Imagery. *IEEE Transactions on Image Processing (TIP)*, 2012, 21(11):4622-4635. (SCI).
- [35]. Yi Wang, Haojie Li, Junchen Liu, **Xin Fan***, Yunzhen Wu. Real-time estimation of hands gestures from Monocular video. *International Conference on Digital Home (ICDH'12)*, 2012, pp.320-325. (EI)..
- [36]. Jieli Zhang, Qianqian Zhao, **Xin Fan**, Zhongxuan Luo. Line Matching based on characteristic ratio invariants of collinear points. *International Conference on Digital Home (ICDH'12)*, 2012, pp.268-273. (EI).
- [37]. Renjie Gao, **Xin Fan**, Jieli Zhang, Zhongxuan Luo. Haze filtering with aerial perspective. *International Conference on Image Processing (ICIP'12)*, 2012, pp. 989-992. (EI).
- [38]. Zhongxuan Luo, Hao Sun, **Xin Fan**, Jieli Zhang. Face recognition using average invariant factor. *International Conference on Image Processing (ICIP'12)*, 2012, pp. 1429-1432. (EI).
- [39]. Hao Huang, **Xin Fan**, Myron Weiner, Kristin Martin-Cook, Guanghua Xiao, Jeannie Davis, Michael Devous, Roger Rosenberg, Ramon Diaz-Arrastia. Distinctive disruption patterns of white matter tracts in Alzheimer's disease with full diffusion tensor characterization. *Neurobiology of Aging*, 2012, 33(9):2029-2045. (SCI).
- [40]. Kirti Saxena, Leanne Tamm, Annie Walley, Alex Simmons, Nancy Rollins, Graham Emslie, **Xin Fan**, Hao Huang. A preliminary investigation of corpus callosum and anterior commissure aberrations in aggressive youth with bipolar disorders. *Journal of child and adolescent psychopharmacology*. 22(2):112-119. (SCI).

2011

- [41]. Miaozhen Lin, **Xin Fan**. Low Resolution Face Recognition with Pose Variations Using Deep Belief Networks. *Proceedings - 4th International Congress on Image and Signal Processing, CISP 2011*, v 3, p 1522-1526. (EI).
- [42]. Wenyu Hu, Zhongxuan Luo, **Xin Fan**, and Jieli Zhang. Laplacian-based image retargeting with salient object magnified. *Proceedings - 4th International Congress on Image and Signal Processing, CISP 2011*, v 4, p 1931-1935.(EI).
- [43]. Bin Liu, Zhihuan Huang, **Xin Fan**, Haojie Li. Prosthetic Modeling of the Femoral Head Based on Reverse Method. *Applied Mechanics and Materials*. 2011, Vols. 88-89: 225-229. (EI).
- [44]. Yi Wang, **Xin Fan**, Haojie Li, Qi Jia. A hybrid visual attention method based on Itti model. *Proceedings - Workshop on Digital Media and Digital Content Management, DMDCM 2011*. (EI).
- [45]. Yunzhen Wu, yi Wang, **Xin Fan**, Ligong Wang. Research and implementation of hand gesture recognition and tracking algorithm based on monocular vision. *Harmonious man-machine environment*, 2011.
- [46]. Hao Huang, **Xin Fan**, Uma Rao. Similar traits of white matter disruption for major depression disorder (MDD) and high risk MDD of adolescents. *International Symposium on Magnetic Resonance Medicine (ISMRM)*, 2011.

[47]. Guoliang Fan, Vijay Venkataraman, **Xin Fan** and Joseph Havlicek. Appearance Learning for Infrared Tracking with Occlusion Handling. (*book chapter*), *Machine Vision Beyond Visible Spectrum (ISBN 978-3-642-11567-7)*, Springer-Verlag, Editors: Riad I. Hammoud, Guoliang Fan, Robert W. McMillan, Katsushi Ikeuchi, 2011.

[48]. Hao Huang, **Xin Fan**, Douglas E. Williamson and Uma Rao. White Matter Changes in Healthy Adolescents at Familial Risk for Unipolar Depression: A Diffusion Tensor Imaging Study. *Neuropsychopharmacology*, 2011, 36(3):684-691. (**Cover article**,SCI).

2010

[49]. Hua Huang, Ning Wu, **Xin Fan**, and Chun Qi. Face Image Super-resolution by Linear Transformation. *Proceedings of 2010 IEEE 17th International Conference on Image Processing (ICIP), 2010*, 913-916. (EI).

[50]. Hua Huang, Huiting He, **Xin Fan**, and Junping Zhang. Human Face Image Super-Resolution Using Canonical Correlation Analysis. *Pattern Recognition*, 2010, 43(7): 2532-2543. (SCI,EI).

[51]. **Xin Fan**, Guoliang Fan, and Joseph P. Havlicek. Generative Models for Maneuvering Target Tracking. *IEEE Trans. on Aerospace and Electronic System*, 2010, 46(2):635-655. (SCI, EI).

[52]. **Xin Fan**, Guanghua Xiao, K. Martin-Cook, R. Rosenberg, M. Weiner, and Hao Huang. Atlas-based approach to study white matter disruption in Alzheimer's disease. *International Symposium on Magnetic Resonance Medicine (ISMRM)*, 2010.

[53]. Guoliang Fan, **Xin Fan**, Vijay Venkataraman, and Joseph P. Havlicek. Vehicle tracking and recognition. (*book chapter*), *Intelligent Video Surveillance: Systems and Technology (ISBN: 978-1-4398-1328-7)*, Editors: Y. Ma and G. Qian, CRC Press, pp149-179, 2010.

2009

[54]. Zhaohua Hu, **Xin Fan**, Yaoliang Song, and Dequn Liang. Joint trajectory tracking and recognition based on bi-directional nonlinear learning. *Image and Vision Computing*, 2009, 27(9):1302-1312. (SCI,EI).

[55]. **Xin Fan**, Guoliang Fan. Graphical Models for Joint Segmentation and Recognition of License Plate Characters. *IEEE Signal Processing Letters*, 2009, 16(1):10-13. (SCI, EI).

[56]. Vijay Venkataraman, Guoliang Fan, **Xin Fan**, and Joseph Havlicek. Appearance Learning by Adaptive Kalman Filters for FLIR Tracking. in *Proc. of 6th IEEE International Workshop on Object Tracking and Classification in and Beyond Visible Spectrum (OTCBVS09)*, in conjunction with CVPR09.(EI).

[57]. **Xin Fan**, Kristin Martin-Cook, Myron F. Weiner, and Hao Huang. Characterizing White Matter Disruption in Alzheimer Disease Patients. *International Symposium on Magnetic Resonance Medicine (ISMRM)*, 2009.

[58]. Hao Huang, **Xin Fan**. HYFF-HYbrid Tractography with Fiber Assignment by Continuous Tracking and Fast Marching. *International Symposium on Magnetic Resonance Medicine (ISMRM)*, 2009.

[59]. Hao Huang, **Xin Fan**, Anup Bidesi, and Uma Rao. White Matter Structural Changes in High-Risk Major Depressive Disorder Youths Detected by Diffusion Tensor Images. *International Symposium on Magnetic Resonance Medicine (ISMRM)*, 2009.