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## Shaoting Zhang

Assistant Professor

Computer Science  
UNC Charlotte  
Charlotte, NC, 28223

szhang16@uncc.edu  
<http://webpages.uncc.edu/~szhang16/>

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## RESEARCH INTERESTS

Large-scale and robust data analytics, medical informatics, computer vision and machine learning

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## EDUCATION

**Rutgers University**, Piscataway, NJ 2007/09 – 2012/01  
Ph.D. in Computer Science  
Advisor: Dr. Dimitris N. Metaxas

**Shanghai Jiao Tong University**, Shanghai, China 2005 – 2007  
M.S. in Computer Software and Theory  
Advisor: Dr. Lixu Gu. Thesis co-advisor: Matthias Harders (ETH)

**Zhejiang University**, Hangzhou, China 2001 – 2005  
B.S. in Software Engineering

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## EMPLOYMENT

**University of North Carolina at Charlotte**, NC 2013/08 – present  
Assistant Professor  
Department of Computer Science

**Rutgers University**, Piscataway, NJ 2012/02 – 2013/08  
Research Assistant Professor  
Department of Computer Science  
Center for Computational Biomedicine Imaging and Modeling (CBIM)  
Center for Dynamic Data Analytics (CDDA)

**Rutgers University**, Piscataway, NJ 2007/09 – 2012/01  
Research and Teaching Assistant  
Department of Computer Science, CBIM

**NEC Laboratories America**, Cupertino, CA 2011/06 – 2011/09  
Research Intern

**Siemens Healthcare**, Malvern, PA 2010/05 – 2010/08  
Research Intern

**Shanghai Jiao Tong University**, Shanghai, China 2005/01 – 2007/07  
Research Assistant  
Lab of Image Guided Surgery and Therapy

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## AWARDS

1. **The 3rd Most Cited Paper in Medical Image Analysis** since 2011 (the first author) 2016  
<http://www.journals.elsevier.com/medical-image-analysis/most-cited-articles>
2. **MICCAI Young Scientist Award in MICCAI'15** (the corresponding author)  
The 18th Conference on Medical Image Computing and Computer Assisted Intervention  
Received by my co-advised PhD student Menglin Jiang, 4 awardees out of 810 submissions 2015
3. **Finalist of Best Student Paper Awards in IEEE ISBI'15** (the corresponding author)  
Received by my PhD student Xiaofan Zhang. 18 finalists out of ~720 submissions 2015
4. **Ralph E. Powe Junior Faculty Enhancement Award** from Oak Ridge Associated Universities  
Among 114 ORAU universities and 134 nominees, only 35 awardees, 3 in the area of Math/CS 2014
5. **Best Paper Travel Award in IEEE ISBI'14** (the corresponding author)  
Received by my PhD student Xiaofan Zhang. 3 awardees out of ~600 submissions 2014
6. **The Front Cover and Featured Article** of Medical Physics (the second author) 2013
7. **MICCAI Young Scientist Award Finalist in MICCAI'11** (the first author)  
The 14th Conference on Medical Image Computing and Computer Assisted Intervention 2011
8. **MICCAI Young Scientist Award in MICCAI'10** (the second author)  
The 13th Conference on Medical Image Computing and Computer Assisted Intervention 2010

(MICCAI is the best conference in medical image computing. The acceptance rate is around 30%.  
Medical Image Analysis is the premier journal in this area, with impact factor 4.5)

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## SELECTED PUBLICATIONS

(Co-authors with \* are my supervised students)

### Journal Articles

1. Shaoting Zhang, Dimitris Metaxas, Large-Scale Medical Image Analytics: Recent Methodologies, Applications and Future Directions, *Medical Image Analysis (MedIA)*, Volume 33, October 2016, Pages 98-101, ISSN 1361-8415. **(20th anniversary of the Medical Image Analysis journal. Thirty position papers from top researchers in this field: [http://www.medicalimageanalysisjournal.com/issue/S1361-8415\(16\)X0005-9](http://www.medicalimageanalysisjournal.com/issue/S1361-8415(16)X0005-9) )**
2. Menglin Jiang\*, Shaoting Zhang, Junzhou Huang, Lin Yang, Dimitris N. Metaxas, Scalable Histopathological Image Analysis via Supervised Hashing with Multiple Features, *Medical Image Analysis (MedIA)*, Available online 5 August 2016, ISSN 1361-8415. (Corresponding Author) **(A selection of the best papers presented at MICCAI 2015 in Germany)**
3. Zhennan Yan, Yiqiang Zhan, Zhigang Peng, Shu Liao, Yoshihisa Shinagawa, Shaoting Zhang, Dimitris N. Metaxas, Xiang Sean Zhou: Multi-Instance Deep Learning: Discover Discriminative Local Anatomies for Bodypart Recognition. *IEEE Transactions on Medical Imaging (TMI)* 35(5): 1332-1343 (2016)
4. Xiang Yu, Junzhou Huang, Shaoting Zhang, Dimitris Metaxas: Face Landmark Fitting via Optimized Part Mixtures and Cascaded Deformable Model, *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 2016.
5. Xiaofan Zhang\*, Hang Dou, Tao Ju, Jun Xu, Shaoting Zhang: Fusing Heterogeneous Features from Stacked Sparse Autoencoder for Histopathological Image Analysis, *IEEE Journal of Biomedical and Health Informatics (JBHI)*, 2016. (Corresponding Author)

6. Xiaofan Zhang\*, Fuyong Xing, Hai Su, Lin Yang, [Shaoting Zhang](#): High-Throughput Histopathological Image Analysis via Robust Cell Segmentation and Hashing. *Medical Image Analysis (MedIA)*, Volume 26, Issue 1, Pages 306-315, 2015. (Corresponding Author)
7. Ruogu Fang, [Shaoting Zhang](#), Tsuhan Chen, Pina C. Sanelli: Robust Low-dose CT Perfusion Deconvolution via Tensor Total-Variation Regularization, *IEEE Transactions on Medical Imaging (TMI)*, Volume 34, Issue 7, Pages 1533-1548, 2015.
8. [Shaoting Zhang](#), Ming Yang, Timothee Cour, Kai Yu, Dimitris Metaxas: Query Specific Rank Fusion for Image Retrieval, *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, Volume 37, Issue 4, Pages 803-815, 2015. (Corresponding Author)
9. Menglin Jiang\*, [Shaoting Zhang](#), Hongsheng Li, Dimitris Metaxas: Computer-Aided Diagnosis of Mammographic Masses Using Scalable Image Retrieval, *IEEE Transactions on Biomedical Engineering (TBME)*, Volume 62, Issue 2, Pages 783-792, 2015. (Corresponding Author)
10. Xiaofan Zhang\*, Wei Liu, Murat Dundar, Badve Sunil, [Shaoting Zhang](#): Towards Large-Scale Histopathological Image Analysis: Hashing-Based Image Retrieval, *IEEE Transactions on Medical Imaging (TMI)*, Volume 34, Issue 2, Pages 496-506, 2015. (Corresponding Author)
11. Xiang Yu\*, [Shaoting Zhang](#), Zhennan Yan, Fei Yang, Junzhou Huang, Norah Dunbar, Matthew Jensen, Judee Burgoon, Dimitris Metaxas: Is Interactional Dissynchrony a Clue to Deception? Insights from Automated Analysis of Nonverbal Visual Cues, *IEEE Transactions on Cybernetics*, Volume 45, Issue 3, Pages 506-520, 2015. (Corresponding Author)
12. Guotai Wang\*, [Shaoting Zhang](#), Dimitris Metaxas, Lixu Gu: A Homotopy-Based Sparse Representation for Fast and Accurate Shape Prior Modeling in Liver Surgical Planning, *Medical Image Analysis*, Volume 19, Issue 1, Pages 176-186, 2015.
13. Zhennan Yan\*, [Shaoting Zhang](#), Chaowei Tan, Hongxing Qin, Boubakeur Belaroussi, Hui Jing Yu, Colin Miller, Dimitris Metaxas: Atlas-based Liver Segmentation and Hepatic Fat-fraction Assessment for Clinical Trials, *Computerized Medical Imaging and Graphics*, Volume 41, Pages 80-92, 2015. (Corresponding Author)
14. Hongsheng Li, Xiaolei Huang, Junzhou Huang, [Shaoting Zhang](#): Feature Matching with Affine-Function Transformation Models, *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, Volume 36, Issue 12, Pages 2407-2422, 2014.
15. Jingjing Liu, Bo Liu, [Shaoting Zhang](#), Fei Yang, Peng Yang, Dimitris N. Metaxas, Carol Neidle, Non-manual Grammatical Marker Recognition based on Multi-scale, Spatio-temporal Analysis of Head Pose and Facial Expressions, *Image and Vision Computing*, Volume 32, Issue 10, Pages 671-81, 2014. **Best of Automatic Face and Gesture Recognition.** (Corresponding Author)
16. Yang Yu\*, [Shaoting Zhang](#), Kang Li, Dimitris Metaxas, Leon Axel: Deformable Models with Sparsity Constraints for Cardiac Motion Analysis, *Medical Image Analysis*, Volume 18, Issue 6, Pages 927-937, 2014. (Corresponding Author)
17. Dimitris, Metaxas, [Shaoting Zhang](#): A Review of Motion Analysis Methods for Human Nonverbal Communication Computing, *Image and Vision Computing, special issue on Machine learning in motion analysis: New advances*, Volume 31, Issues 6-7, Pages 421-433, 2013.
18. Guotai Wang\*, [Shaoting Zhang](#), Feng Li, Lixu Gu: A New Segmentation Framework Based on Sparse Shape Composition in Liver Surgery Planning System, *Medical Physics*, Volume 40, Issue 5, Page 051913, 2013. **(Chosen as the cover and featured article, 1 out of ~50 articles in the issue of May 2013)**
19. [Shaoting Zhang](#), Yiqiang Zhan and Dimitris Metaxas: Deformable Segmentation via Sparse Representation and Dictionary Learning, *Medical Image Analysis*, Volume 16, Issue 7, Pages 1385-1396, 2012. **(A selection of the best 12 papers presented at MICCAI 2011 in Toronto)**
20. [Shaoting Zhang](#), Junzhou Huang, Hongsheng Li and Dimitris Metaxas: Automatic Image Annotation and Retrieval Using Group Sparsity, *IEEE Transactions on Systems, Man, and Cybernetics: Part B*, Volume 42, Issue 3, Pages 838-849, 2012.

21. Shaoting Zhang, Yiqiang Zhan, Maneesh Dewan, Junzhou Huang, Dimitris Metaxas and Xiang Zhou: Towards Robust and Effective Shape Modeling: Sparse Shape Composition, *Medical Image Analysis*, Volume 16, Issue 1, Pages 265-277, 2012. **(One of the Top 25 Hottest papers in Medical Image Analysis in 2012 Full Year and 2013 Full Year)**
22. Junzhou Huang, Shaoting Zhang, Hongsheng Li and Dimitris Metaxas: Composite Splitting Algorithms for Convex Optimization, *Computer Vision and Image Understanding*, Volume 115, Issue 12, Pages 1610-1622, 2011.
23. Junzhou Huang, Shaoting Zhang and Dimitris Metaxas: Efficient MR Image Reconstruction for Compressed MR Imaging, *Medical Image Analysis*, Volume 15, Issue 5, Pages 670-679, 2011. **(A selection of the best 10 papers presented at MICCAI 2010 in Beijing)**
24. Shaoting Zhang, Junzhou Huang and Dimitris Metaxas: Robust Mesh Editing Using Laplacian Coordinates, *Graphical Models*, Volume 73, Issue 1, Pages 10-19, 2011.

### Conference Papers

1. [MICCAI'16] Menglin Jiang\*, Shaoting Zhang, Yuanjie Zheng, Dimitris Metaxas: Mammographic Mass Segmentation with Online Learned Shape and Appearance Priors. The 19th Annual International Conference on Medical Image Computing and Computer Assisted Intervention, 2016. **Oral presentation ~4%**
2. [MICCAI'16] Bin Kong\*, Yiqiang Zhan, Min Shin, Tom Denney, Shaoting Zhang: Recognizing End-diastole and End-systole Frames via Deep Temporal Regression Network. The 19th Annual International Conference on Medical Image Computing and Computer Assisted Intervention, 2016.
3. [MICCAI'16] Tao Xu, Han Zhang, Xiaolei Huang, Shaoting Zhang, Dimitris Metaxas: Multimodal Deep Learning for Cervical Dysplasia Diagnosis. The 19th Annual International Conference on Medical Image Computing and Computer Assisted Intervention, 2016.
4. [IJCAI'16] Shu Wang, Shaoting Zhang, Wei Liu, Dimitris Metaxas: Visual Tracking with Reliable Memories. The 25th International Joint Conference on Artificial Intelligence, 2016.
5. [IJCAI'16] Xiang Yu, Zhe Lin, Shaoting Zhang, Dimitris Metaxas: Nonlinear Hierarchical Part-based Regression for Unconstrained Face Alignment. 25th International Joint Conference on Artificial Intelligence, 2016.
6. [IJCAI'16] Bo Liu, Xiaotong Yuan, Shaoting Zhang, Qingshan Liu, Dimitris Metaxas: Efficient k-Support-Norm Regularized Minimization via Fully Corrective Frank-Wolfe Method. The 25th International Joint Conference on Artificial Intelligence, 2016.
7. [CVPR'16] Xiaofan Zhang\*, Feng Zhou, Yuanqing Lin, Shaoting Zhang: Embedding Label Structures for Fine-grained Feature Representation. 29th IEEE Conference on Computer Vision and Pattern Recognition, 2016.
8. [CVPR'16] Han Zhang, Tao Xu, Mohamed Elhoseiny, Xiaolei Huang, Shaoting Zhang, Ahmed Elgammal, Dimitris Metaxas: SPDA-CNN: Unifying Semantic Part Detection and Abstraction for Fine-grained Recognition. The 29th IEEE Conference on Computer Vision and Pattern Recognition, 2016.
9. [ISBI'16] Zhongyu Li\*, Fumin Shen, Ruogu Fang, Sailesh Conjeti, Amin Katouzian, Shaoting Zhang: Maximum Inner Product Search for Morphological Retrieval of Large-Scale Neuron Data, in the Proceeding of the IEEE International Symposium on Biomedical Imaging, 2016. Oral presentation
10. [ICCV'15] Fumin Shen, Wei Liu, Shaoting Zhang, Yang Yang, Heng Tao Shen: Learning Binary Codes for Maximum Inner Product Search, International Conference on Computer Vision, 2015.
11. [ICCV'15] Xi Peng, Shaoting Zhang, Yang Yu, Dimitris Metaxas: PIEFA: Personalized Incremental and Ensemble Face Alignment, International Conference on Computer Vision, 2015.
12. [MICCAI'15] Hai Su, Fuyong Xing, Xiangfei Kong, Yuanpu Xie, Shaoting Zhang, Lin Yang: Robust Cell Detection and Segmentation in Histopathological Images using Sparse Reconstruction and Stacked Denoising Autoencoders, the 18th Annual International Conference on Medical Image Computing and Computer Assisted Intervention, 2015. **Oral presentation, ~4%, MICCAI 2015 Young Scientist Award Finalist**

13. [MICCAI'15] Ruoyu Li, Yeqing Li, Ruogu Fang, [Shaoting Zhang](#), Hao Pan, Junzhou Huang: Fast Preconditioning for Accelerated Multi-Contrast MRI Reconstruction. The 18th Annual International Conference on Medical Image Computing and Computer Assisted Intervention, 2015. **Oral presentation, ~4%**
14. [MICCAI'15] Menglin Jiang\*, [Shaoting Zhang](#), Junzhou Huang, Lin Yang, Dimitris Metaxas: Joint Kernel-Based Supervised Hashing for Scalable Histopathological Image Analysis, the 18th Annual International Conference on Medical Image Computing and Computer Assisted Intervention, 2015. **MICCAI 2015 Young Scientist Award, 4 out of 810 submissions**
15. [IPMI'15] Xiaofan Zhang\*, Hai Su, Lin Yang, [Shaoting Zhang](#): Weighted Hashing with Multiple Cues for Cell-Level Analysis of Histopathological Images, The 24th biennial international conference on Information Processing in Medical Imaging, 2015.
16. [CVPR'15] Xiaofan Zhang\*, Hai Su, Lin Yang, [Shaoting Zhang](#): Fine-Grained Histopathological Image Analysis via Robust Segmentation and Large-Scale Retrieval, IEEE Conference on Computer Vision and Pattern Recognition, 2015. (CVPR)
17. [ISBI'15] Xiaofan Zhang\*, Hang Dou, Tao Ju, [Shaoting Zhang](#): Fusing Heterogeneous Features for the Image-Guided Diagnosis of Intraductal Breast Lesions, in the Proceeding of the IEEE International Symposium on Biomedical Imaging, 2015. Oral presentation, **Finalist of Best Student Papers**
18. [ISBI'15] Menglin Jiang\*, [Shaoting Zhang](#), Ruogu Fang, Dimitris Metaxas: Leveraging Coupled Multi-Index for Scalable Retrieval of Mammographic Masses, in the Proceeding of the IEEE International Symposium on Biomedical Imaging, 2015. Oral presentation
19. [MICCAI'14] Xiaofan Zhang\*, Lin Yang, Wei Liu, Hai Su, [Shaoting Zhang](#): Mining Histopathological Images via Composite Hashing and Online Learning, the 17th Annual International Conference on Medical Image Computing and Computer Assisted Intervention, 2014. **Early acceptance rate, ~10%. Student travel award**
20. [MICCAI'14] Yan Zhu\*, [Shaoting Zhang](#), Wei Liu, Dimitris Metaxas: Scalable Histopathological Image Analysis via Active Learning, the 17th Annual International Conference on Medical Image Computing and Computer Assisted Intervention, 2014. **Early acceptance rate, ~10%. Student travel award**
21. [MICCAI'14] Ruogu Fang, Pina C. Sanelli, [Shaoting Zhang](#), Tsuhan Chen: Tensor Total-Variation Regularized Deconvolution for Efficient Low-Dose CT Perfusion, the 17th Annual International Conference on Medical Image Computing and Computer Assisted Intervention, 2014.
22. [ISBI'14] Xiaofan Zhang\*, Wei Liu, [Shaoting Zhang](#): Mining Histopathological Images via Hashing-Based Scalable Image Retrieval, in the Proceeding of the IEEE International Symposium on Biomedical Imaging, 2014. Oral presentation, **Best Paper Travel Award, 3 out of ~600 submissions**
23. [ISBI'14] Jie Yang\*, [Shaoting Zhang](#), Xiahai Zhuang, Long Jiang, Lixu Gu: Robust and Efficient 3D Registration via Depth Map-Based Feature Point Matching in Image-Guided Neurosurgery, in the Proceeding of the IEEE International Symposium on Biomedical Imaging, 2014. **(Jie was undergraduate student in SJTU)**
24. [ISBI'14] Menglin Jiang\*, [Shaoting Zhang](#), Jingjing Liu, Tian Shen, Dimitris Metaxas: Computer-Aided Diagnosis of Mammographic Masses Using Vocabulary Tree-Based Image Retrieval, in the Proceeding of the IEEE International Symposium on Biomedical Imaging, 2014. Oral presentation
25. [ISBI'14] Han Zhang\*, [Shaoting Zhang](#), Kang Li, Dimitris Metaxas: Robust shape prior modeling based on Gaussian-Bernoulli Restricted Boltzmann Machine, in the Proceeding of the IEEE International Symposium on Biomedical Imaging, 2014. Oral presentation
26. [ICCV'13] Xiang Yu, Junzhou Huang, [Shaoting Zhang](#), Wang Yan, Dimitris Metaxas: Pose-free Facial Landmark Fitting via Optimized Part Mixtures and Cascaded Deformable Shape Model, in Proceeding of the 14th International Conference on Computer Vision, pp. 1944-1951, 2013.
27. [MICCAI'13] Mustafa Uzunbas, Chao Chen, [Shaoting Zhang](#), Kilian Pohl, Kang Li, Dimitris Metaxas: Collaborative Multi Organ Segmentation by Integrating Deformable and Graphical Models, in Proceeding of the 16th Annual International Conference on Medical Image Computing and Computer Assisted Intervention, LNCS 8150, pp. 157-164, 2013.

28. [IPMI'13] Mingchen Gao, Chao Chen, [Shaoting Zhang](#), Zhen Qian, Dimitris Metaxas, Leon Axel: Segmenting the Papillary Muscles and the Trabeculae from High Resolution Cardiac CT through Restoration of Topological Handles, In the Proceeding of the 23rd biennial International Conference on Information Processing in Medical Imaging, LNCS 7917, pp. 184-195, 2013.
29. [IPMI'13] Yang Yu\*, [Shaoting Zhang](#), Junzhou Huang, Dimitris Metaxas, Leon Axel: Sparse Deformable Models with Application to Cardiac Motion Analysis, In the Proceeding of the 23rd biennial International Conference on Information Processing in Medical Imaging, LNCS 7917, pp. 208-219, 2013.
30. [ISBI'13] Zhennan Yan\*, [Shaoting Zhang](#), Xiaofeng Liu, Dimitris Metaxas, Albert Montillo: Accurate segmentation of brain images into 34 structures combining a non-stationary adaptive statistical atlas and a multi-atlas with applications to Alzheimer's disease, In the Proceeding of the IEEE International Symposium on Biomedical Imaging, pp. 1202-1205, 2013. Oral presentation
31. [ISBI'13] Yang Yu\*, [Shaoting Zhang](#), Zhennan Yan, Song Chen, Rong Zhou, Dimitris Metaxas: Mouse LV 3D Motion and Strain Analysis using Tagged MRI, In the Proceeding of the IEEE International Symposium on Biomedical Imaging, pp. 1190-1193, 2013. Oral presentation
32. [FG'13] Jingjing Liu, Bo Liu, [Shaoting Zhang](#), Fei Yang, Peng Yang, Dimitris N. Metaxas and Carol Neidle: Recognizing Eyebrow and Periodic Head Gestures Using CRFs for Non-Manual Grammatical Marker Detection in ASL, IEEE International Conference on Automatic Face and Gesture Recognition, 2013. Oral presentation ~10%
33. [ECCV'12] [Shaoting Zhang](#), Ming Yang, Timothee Cour, Kai Yu and Dimitris Metaxas: Query Specific Fusion for Image Retrieval, In Proceeding of the 12th European Conference on Computer Vision, LNCS 7573, pp. 660-673, 2012.
34. [ECCV'12] Xinyi Cui, Junzhou Huang, [Shaoting Zhang](#) and Dimitris Metaxas: Background Subtraction using Group Sparsity and Low Rank Constraint, In Proceeding of the 12th European Conference on Computer Vision, LNCS 7572, pp. 612-615, 2012.
35. [MICCAI'12] Mingchen Gao, Junzhou Huang, Xiaolei Huang, [Shaoting Zhang](#), Dimitris Metaxas: Simplified Labeling Process for Medical Image Segmentation, in Proceeding of the 15th Annual International Conference on Medical Image Computing and Computer Assisted Intervention, LNCS 7511, pp. 387-394, 2012.
36. [MICCAI'12] [Shaoting Zhang](#), Yiqiang Zhan, Yan Zhou, Mustafa Uzunbas and Dimitris Metaxas: Shape Prior Modeling using Sparse Representation and Online Dictionary Learning, in Proceeding of the 15th Annual International Conference on Medical Image Computing and Computer Assisted Intervention, LNCS 7512, pp. 435-442, 2012.
37. [ICCV'11] Hongsheng Li, Junzhou Huang, [Shaoting Zhang](#), and Xiaolei Huang: Optimal Object Matching via Convexification and Composition, In the Proceeding of the 13th International Conference on Computer Vision, pp. 33-40, 2011.
38. [ICCV'11] Tian Shen, Xiaolei Huang, Hongsheng Li, Edward Kim, [Shaoting Zhang](#), and Junzhou Huang: A 3D Laplacian-Driven Parametric Deformable Model, In the Proceeding of the 13th International Conference on Computer Vision, pp. 279-286, 2011.
39. [MICCAI'11] [Shaoting Zhang](#), Yiqiang Zhan, Maneesh Dewan, Junzhou Huang, Dimitris Metaxas and Xiang Zhou: Deformable Segmentation via Sparse Shape Representation, In the Proceeding of the 14th Annual International Conference on Medical Image Computing and Computer Assisted Intervention, LNCS 6892, pp. 451-458, 2011. **MICCAI 2011 Young Scientist Award Finalist**
40. [MICCAI'11] [Shaoting Zhang](#), Junzhou Huang, Mustafa Uzunbas, Tian Shen, Foteini Delis, Xiaolei Huang, Nora Volkow, Panayotis Thanos and Dimitris N. Metaxas: 3D Segmentation of Rodent Brain Structures Using Hierarchical Shape Priors and Deformable Models, In the Proceeding of the 14th Annual International Conference on Medical Image Computing and Computer Assisted Intervention, pp. 611-618, 2011.
41. [MICCAI'11] Ting Chen, Yiqiang Zhan, [Shaoting Zhang](#) and Maneesh Dewan: Automatic Alignment of Brain MR Scout Scans using Data-adaptive Multi-structural Model, In the Proceeding of the 14th Annual Interna-

tional Conference on Medical Image Computing and Computer Assisted Intervention, LNCS 6892, pp. 574-581, 2011.

42. [MICCAI'11] Scott Kulp, Mingchen Gao, [Shaoting Zhang](#), Zhen Qian, Szilard Voros, Leon Axel and Dimitris Metaxas: Using High Resolution Cardiac CT Data to Model and Visualize Patient-Specific Interactions Between Trabeculae and Blood Flow, In the Proceeding of the 14th Annual International Conference on Medical Image Computing and Computer Assisted Intervention, LNCS 6891, pp. 468-475, 2011.
43. [CVPR'11] [Shaoting Zhang](#), Yiqiang Zhan, Maneesh Dewan, Junzhou Huang, Dimitris Metaxas, Xiang Sean Zhou: Sparse Shape Composition: A New Framework for Shape Prior Modeling, In Proceeding of the IEEE Computer Society Conference on Computer Vision and Pattern Recognition, pp. 1025-1032, 2011.
44. [FIMH'11] Mingchen Gao, Junzhou Huang, [Shaoting Zhang](#), Zhen Qian, Szilard Voros, Dimitris Metaxas and Leon Axel: 4D Cardiac Reconstruction Using High Resolution CT Images , In the Proceeding of the International Conference on Functional Imaging and Modeling of the Heart, LNCS 6666, pp. 153-160, 2011. **Best Paper Award**
45. [MICCAI'10] Junzhou Huang, [Shaoting Zhang](#) and Dimitris Metaxas: Efficient MR Image Reconstruction for Compressed MR Imaging, In Proceeding of the 13th Annual International Conference on Medical Image Computing and Computer Assisted Intervention, LNCS 6361, pp. 135-142, 2010. **MICCAI 2010 Young Scientist Award**
46. [ECCV'10] Junzhou Huang, [Shaoting Zhang](#) and Dimitris Metaxas: Fast Optimization for Mixture Prior Models, In Proceeding of the 11th European Conference on Computer Vision, pp. 607-620, 2010.
47. [CVPR'10] Yuchi Huang, Qingshan Liu, [Shaoting Zhang](#) and Dimitris Metaxas: Image Retrieval via Probabilistic Hypergraph Ranking, In Proceeding of the IEEE Computer Society Conference on Computer Vision and Pattern Recognition, pp. 3376-3383, 2010.
48. [CVPR'10] [Shaoting Zhang](#), Junzhou Huang, Yuchi Huang, Yang Yu, Hongsheng Li and Dimitris Metaxas: Automatic Image Annotation Using Group Sparsity, In Proceeding of the IEEE Computer Society Conference on Computer Vision and Pattern Recognition, pp. 3312-3319, 2010. **oral presentation, 4.5%**
49. [EG'10] [Shaoting Zhang](#), Andrew Nealen and Dimitris Metaxas: Skeleton Based As-Rigid-As-Possible Volume Modeling, In Proceeding of Eurographics short papers, 2010. oral presentation
50. [ISBI'09] [Shaoting Zhang](#), Xiaoxu Wang, Dimitris Metaxas, Ting Chen and Leon Axel: LV Surface Reconstruction From Sparse tMRI Using Laplacian Surface Deformation And Optimization, In Proceeding of the IEEE International Symposium on Biomedical Imaging, pp. 698-701, 2009.

## Editorial and Book Chapters

1. Ruogu Fang, Tsuhan Chen, Dimitris N. Metaxas, Pina C. Sanelli, [Shaoting Zhang](#) (Eds.): Sparsity techniques in medical imaging. *Comp. Med. Imag. and Graph.* 46: 1, 2015.
2. Bjoern Menze, Georg Langs, Albert Montillo, Michael Kelm, Henning Muller, [Shaoting Zhang](#), Tom Cai, Dimitris Metaxas (Eds.): Medical Computer Vision: Algorithms for Big Data, LNCS 8848, *International Workshop, MCV 2014, Held in Conjunction with MICCAI 2014*, Cambridge, MA, USA, September 18, 2014.
3. Dimitris Metaxas, Scott Kulp, Mingchen Gao, [Shaoting Zhang](#), Zhen Qian, Leon Axel: Segmentation and Blood Flow Simulations of Patient-Specific Heart Data, Book chapter in *Computational Surgery and Dual Training Computing, Robotics, and Imaging for the Surgical Platform*, Chapter 5: Modeling, Simulation and Experimental data, 5.1 Cardiovascular, Springer, 2014.
4. [Shaoting Zhang](#), Yiqiang Zhan, Yan Zhou, Dimitris Metaxas: Adaptive Shape Prior Modeling via Online Dictionary Learning, *Computer Vision for Medical Imaging*, edited by C.H. Chen, World Scientific Publishing, World Scientific Publishing, 2014.
5. Tian Shen, [Shaoting Zhang](#), Junzhou Huang, Xiaolei Huang and Dimitris Metaxas: Integrating Shape and Texture in 3D Deformable Models: From Metamorphs to Active Volume Models, book chapter in *Multi-Modality State-of-the-Art Medical Image Segmentation and Registration Methodologies*, Volume I, Chapter 1, A.S. El-Baz, R. Acharya U, and M. Mirmehdi (Editors), Springer, March 2011.

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## PATENTS

1. Ming Yang, [Shaoting Zhang](#), Kai Yu: *Query Specific Fusion for Image Retrieval*, Patent Number: 8,762,390, approved in 6/24/2014, NEC Labs
  2. [Shaoting Zhang](#), Yiqiang Zhan, Maneesh Dewan, Ting Chen and Xiang Zhou: *System and Methods for Robustly Learning Shape Statistics Using Sparse Representation*, invention disclosure. Siemens HealthCare
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## GRANTS

1. **Awarded**, NSF-II-New: Collaborative: A Mixed Reality Environment for Enabling Everywhere Data-Centric Work, UNC Charlotte, 2016-2019  
**Co-PI**, with Dr. Aidong Lu \$399,000
  2. **Awarded**, ORAU: Ralph E. Powe Jr. Faculty Enhancement Award, Searching and Reasoning in Large-Scale Medical Image Databases, UNC Charlotte, 2014-2015  
**PI** \$10,000
  3. **Awarded**, UNC Faculty Research Grant (FRG), Robust and Real-Time Extraction of Nonverbal Communication Cues from Video, UNC Charlotte, 2014-2015  
**PI**, with Co-PI Dr. Richard Souvenir \$12,000
  4. **Awarded**, NSF-I/UCRC, The Center for Dynamic Data Analytics (CDDA), funding from BioClinica Inc. on robust and scalable medical imaging informatics, Rutgers, 2012-2014  
**Co-PI**, with Dr. Dimitris Metaxas \$70,000
  5. **Awarded**, NSF-MRI, Development of a Near-Real-Time High-Accuracy Musculoskeletal System Measurement and Analysis Instrument (SKELETALMI), Rutgers, 2012-2016 (Research AP at Rutgers)  
**Senior Personnel**. PIs: Dr. Dimitris Metaxas, Dr. Kang Li, Dr. Vladimir Pavlovic \$1,111,040
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## TEACHING

- **Fall 2015: UNCC ITCS 6114/8114, "Algorithms and Data Structures"** graduate-level  
45 students enrolled; 37 students responded to teaching evaluation  
Overall, I learned a lot in this course: 4.57 (college average 4.06; department average 4.02)  
Overall, this instructor was effective: 4.54 (college average 3.91; department average 3.87)
- **Fall 2015: UNCC ITCS 6120/8120, "Computer Graphics"** graduate-level  
10 students enrolled; 9 students responded to teaching evaluation  
Overall, I learned a lot in this course: 4.78 (college average 4.06; department average 4.02)  
Overall, this instructor was effective: 4.67 (college average 3.91; department average 3.87)
- **Spring 2015: UNCC ITCS 6114/8114, "Algorithms and Data Structures"** graduate-level  
57 students enrolled; 46 students responded to teaching evaluation  
Overall, I learned a lot in this course: 4.52 (college average 4.05; department average 4.01)  
Overall, this instructor was effective: 4.57 (college average 3.96; department average 3.93)
- **Spring 2014: UNCC ITCS 6114/8114, "Algorithms and Data Structures"** graduate-level  
33 students enrolled; 29 students responded to teaching evaluation  
Overall, I learned a lot in this course: 4.31 (college average 4.11; department average 4.08)  
Overall, this instructor was effective: 4.24 (college average 3.95; department average 3.91)
- **Fall 2013: UNCC ITCS 8010, "Topics in CS: Medical Imaging Informatics"**, graduate-level  
4 students enrolled. Teaching evaluation 4.75



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## ADVISING

### Current students

- Xiaofan Zhang, UNC Charlotte, 2013 to present  
Co-authored papers: [ISBI'14 Best Student Paper, MICCAI'14, TMI'15, ISBI'15 Best Student Paper Finalist, IPMI'15, Media'15, CVPR'15, CVPR'16, JBHI'16]  
**Internship referral: Media Analytics Department at NEC Labs America (with Feng Zhou)**
- Menglin Jiang, CS, Rutgers, 2013 to present, co-advised with Dr. Dimitris Metaxas  
Co-authored papers: [ISBI'14 oral, MLMI'14 oral, TBME'15, ISBI'15 oral, MICCAI'15 Young Scientist Award]  
**Internship referral: GE Global Research (with Mustafa Uzunbas)**

### Former students

#### Graduate students

- Zhennan Yan, CS, Rutgers, 2012-2014, co-advised with Dr. Dimitris Metaxas  
Co-authored papers: [ISBI'13 oral, Computerized Medical Imaging and Graphics'14, TMI'16]  
**Internship referral: Siemens HealthCare (with Yiqiang Zhan), 2014 and 2015**
- Yang Yu, PhD, CS, Rutgers, 2012-2014, co-advised with Dr. Dimitris Metaxas  
Co-authored papers: [ISBI'13 oral, IPMI'13, Medical Image Analysis'14]
- Xiang Yu, PhD, Rutgers, co-advised with Dr. Metaxas, 2012-2013  
Co-authored papers: [IEEE Transactions on Cybernetics'15], [ICCV'13], [TPAMI'16]  
**Job referral: Media Analytics Department at NEC Labs America, starting from 2015**
- Yan Zhu, PhD, Rutgers, co-advised with Dr. Metaxas, 2014  
Co-authored papers: [MICCAI'14]  
**Internship referral: Facebook AI Lab (with Yuandong Tian), 2015**
- Guotai Wang, MS, BME, Shanghai Jiao Tong University, 2012-2014  
Co-advised with Dr. Lixu Gu, **now PhD at University College London**  
Co-authored papers: [Cover of Medical Physics'13, EMBC'13 oral, ISBI'14, Medical Image Analysis'15]

#### Undergraduate students

- Andrew Brinker, undergraduate (REU), California State University, 2014 Summer  
The 1st prize in the annual REU Symposium at UNC Charlotte  
Co-authored paper: [SPIE'15]
- Annika Fredrikson, undergraduate (REU), The Principia, 2014 Summer  
The 3rd prize in the annual REU Symposium at UNC Charlotte  
Co-author paper: [SPIE'15, ISBI'15 abstract]
- Jie (Jessica) Yang, undergraduate, BME, Shanghai Jiao Tong University, 2013-2014  
Co-advised with Dr. Lixu Gu, **now PhD at Columbia University**  
Co-authored papers: [ISBI'14, INT J MED ROBOT COMP'14]

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## SERVICE

- Guest co-editor of journals and proceedings:
  - Springer LNCS Proceeding on Medical Computer Vision: Algorithms for Big Data, 2014-16
  - Special issues in Computerized Medical Imaging and Graphics, Neurocomputing
- Organizer of conferences and workshops:

- MICCAI 2014-16 Workshops on Medical Computer Vision: Algorithms for Big Data (bigMCV), with Bjoern Menze, Georg Langs, Albert Montillo, Michael Kelm, Henning Mueller, Weidong (Tom) Cai, Dimitris Metaxas, <http://www.medicalcomputervision.org/>
  - MICCAI 2012, 14 Workshop on Sparsity Techniques in Medical Imaging (STMI 2014), with Tsuhan Chen, Ruogu Fang, Zhi-Pei Liang, D. Metaxas and Pina C. Sanelli, <http://stmi2014.ece.cornell.edu/>
  - o Editorial board of NeuroComputing since 3/2015
  - o Area chair for conferences: ISBI'15
  - o Reviewer for conferences: CVPR, ICCV, ECCV, MICCAI, ISBI, Eurographics
  - o Reviewer for journals: TPAMI, TMI, TIP, T-CYB, T-BME, T-CSVT, T-KDE, T-IFS, Media
  - o Senior member of the IEEE since 2015.
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## TALKS

- o April 2015, University of North Carolina at Chapel Hill, NC, US
  - o January 2015, Computer Science, Rutgers University, Piscataway, NJ, US
  - o November 2014, Computer Science, Indiana University-Purdue University Indianapolis, Indiana, US.
  - o October 2014, Computer Science, University of Georgia, Athens, Georgia, US.
  - o May 2013, IBM T. J. Watson Research Center, Yorktown Heights, NY, US.
  - o April 2013, Ventana Medical Systems, Inc., Roche, CA, US.
  - o March 2013, Department of CSE (Faculty Onsite Interview), Washington University in St. Louis, US.
  - o March 2013, National Space Biomedical Research Institute (NSBRI), Houston, TX, (Demo)
  - o January 2013, CS, Beihang University (Beijing University of Aeronautics and Astronautics), China
  - o December 2012, Med-X Research Institute, Shanghai Jiao Tong University (SJTU), Shanghai, China
  - o December 2012, CS, East China Normal University (ECNU), Shanghai, China
  - o October, 2012, Siemens Healthcare, "Graph Fusion for Large-Scale Image Retrieval", Malvern, PA
  - o September 2012, Center for Dynamic Data Analytics (CDDA), Rutgers University, Piscataway, NJ
  - o May 2012, Center for Dynamic Data Analytics (CDDA), Stony Brook University, Stony Brook, NY
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