

Scalable Modeling & Imaging & Learning Lab
Dept. Computer Science & Engineering
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Research Interest

- Machine Learning, Data Mining, Computer Vision, Medical Imaging Informatics

Education

Rutgers, the State University of New Jersey, New Brunswick, NJ, USA

Ph.D. in Computer Science, June 2011

- Thesis: *Structured Sparsity: Theorems, Algorithms and Applications*
Advisor: Dr. Dimitris Metaxas and Dr. Tong Zhang

University of Notre Dame, Notre Dame, IN, USA

- Ph.D. Candidate in Computer Science and Engineering, August 2004 - May 2005

Institute of Automation, Chinese Academy of Sciences, Beijing, China

M.S. in Pattern Recognition and Intelligent Systems, June 2003

- Thesis: *Super Resolution Based Iris Image Enhancement*
Advisor: Dr. Tieniu Tan

Huazhong University of Science and Technology, Wuhan, China

- B.E. in Control Science and Engineering, June 1996

Professional Experience

Tenured Associate Professor

- Computer Science and Engineering, U. of Texas at Arlington, TX, 09/2016 -

Adjunct Faculty

- University of Texas Southwestern Medical Center, TX, 04/2015 - present

Tenure-track Assistant Professor

- Computer Science and Engineering, U. of Texas at Arlington, TX, 09/2011 - 08/2016

Research Assistant

- Computer Science, Rutgers University, New Brunswick, NJ, 06/2005 - 07/2011

Research Assistant

- Institute of Automation, Chinese Academy of Science, Beijing, China, 09/2003 - 08/2004

- **Software Engineer**, Industrial and Commercial Bank of China, 07/1996 - 08/2000

Award and Honor

- **NSF CAREER Award**, National Science Foundation, 2016.
- **1st Place Winner**, the Surgical Tool Detection Challenge, Challenges on Modeling and Monitoring of Computer Assisted Interventions (M2CAI), Athens, Greece, October 2016.

- **Best Student Paper Award**, the 18th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), Munich, Germany, October 2015.
- **Best Student Paper Award Finalist**, the 17th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), Boston, USA, September 2014.
- **Best Reviewer Award**, the 27th Annual Conference on Neural Information Processing Systems (NIPS), Lake Tahoe, Nevada, USA, December 2013.
- **Best Paper Award**, the 1st MICCAI Workshop on Sparsity Techniques in Medical Imaging (STMI), Nice, France, October 2012.
- **Young Scientist Award Finalist**, the 14th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), Toronto, Canada, September 2011.
- **Best Paper Award**, the 6th International Conference on Functional Imaging and Modeling of the Heart (FIMH), New York, USA, May 2011.
- **Young Scientist Award**, the 13th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), Beijing, China, September 2010.
- **IBM Watson Emerging Leaders in Multimedia and Signal Processing**, Awarded to 10 students internationally, NY, USA, 2010.
- **Outstanding Graduate**, Chinese Academy of Science, Beijing, China, 2003.
- **Excellent Technology Impetus Prize**, Industrial and Commercial Bank of China, 1999.
- **Outstanding Undergraduate**, Huazhong University of Science and Technology, 1996.

PI Grants (Total: \$2.03M)

1. Gift Fund for Deep Graph Learning Research, **\$150,000**, XtaiPi, Boston, 12/2018.
2. “RI: Small: Collaborative Research: A Topological Analysis of Uncertainly Representation in the Brain”, **\$499,992**, NSF IIS, 08/01/2017 – 07/31/2020.
3. “CAREER: Large Scale Learning for Complex Image-Omics Data Analytics”, **\$535,763**, NSF IIS, 08/01/2016 – 07/31/2021.
4. “III: Small: Collaborative Research: Robust Materials Genome Data Mining Framework for Prediction and Guidance of Nanoparticle Synthesis”, **\$500,000**, NSF IIS, 08/15/2014 – 07/31/2018.
5. “Learning Fine-grained Digital Map for Autonomous Driving”, **\$136,058**, Nokia Research America, 09/01/2014 – 08/31/2016..
6. Gift Fund for Highly Automated Driving Map, **\$50,000**, HERE Map Research, 09/2014.
7. “Energy Disaggregation for Non-intrusive Load Monitoring”, **\$149,998**, Samsung Research America, 09/01/2013 – 08/31/2016.
8. “Structured Sparsity for Rapid Magnetic Resonance Imaging”, **\$10,000**, UTA REP, 2012.

Co-PI Grants (Total: \$1.07M)

1. “RAPID: Collaborative: Data Driven Post-Disaster Waste and Debris Volume Predictions using Smartphone Photogrammetry App and Unmanned Aerial Vehicles”, **\$34,137**, NSF CNS, 10/01/2017 – 09/30/2018.
2. “A Materials Genome Approach to Novel Environment-Friendly Magnets”, **\$15,000**, UTA REP, 2016.
3. “CRI: A Spatiotemporal Annotated Human Activity Repository for Advanced Motion Recognition and Analysis Research”, **\$116,000**, NSF CRI, 09/01/2014 – 08/31/2017.
4. “CMMI:Statistics-based Optimization Methods for Adaptive Interdisciplinary Pain Management”, **\$374,998**, NSF CMMI, 09/01/2014 – 08/31/2017.
5. “GAANN: Educating Health Informatics Researchers”, **\$533,064**, Department of Education, 2012

Teaching Experience

- *Undergraduate Courses*

- CSE 2312 Computer Organization and Assembly Language Programming
- Semesters: Fall 2011, Fall 2012, Spring 2013, Fall 2013, Fall 2014, Spring 2015
- Average of Student Evaluation Scores: **4.2/5.0**

- *Graduate Courses*

- CSE 6392 Advanced Topics in Scalable Searching and Optimization
- Semesters: Spring 2012, Spring 2013, Spring 2014, Spring 2015 Spring 2016 and Spring 2017
- Average of Student Evaluation Scores: **4.5/5.0**
- CSE 5311 Design and Analysis of Algorithms
- Semesters: Fall 2015, Spring 2016 and Fall 2016
- Average of Student Evaluation Scores: **4.2/5.0**

Advising and Mentoring

- **Ph.D Students**

- Yeqing Li (08/2012 - 12/2015, next stop: Google)
- Zheng Xu (08/2014 - present, next stop: Google)
- Ruoyu Li (08/2014 - present, next stop: Facebook)
- Jiawen Yao (08/2014 - present)
- Sheng Wang (08/2015 - present)
- Xinliang Zhu (08/2015 - present)
- Zhifei Deng (08/2016 - present)
- Mohammad Minhazul Haq (08/2016 - present)
- Ashwin Raju (08/2017 - present)
- Chaochao Yan (08/2017 - present)

- **Master Students with Thesis**

- Chen Chen (01/2012 - 01/2015, next stop: UIUC)
- Dheeraj Ganti (09/2014 - 01/2016, next stop: Oracle)
- Viswanathan Rajalingam (01/2015 - 01/2017, next stop: Samsung Lab)
- Vivek Balaji (01/2015 - 01/2017, next stop: BMW)
- Shirong Xue (09/2015 - 07/2017, next stop: Walmart Lab)
- Ashwin Raju (09/2015 - 07/2017, next stop: UTA PhD)
- Arjun Vekariya (09/2015 - 07/2017, next stop: Raizlabs)
- Xiaoyu Zhang (09/2017 - 12/2018, next stop: UTA PhD)
- Siyu Xiu (06/2018 - present)

• PostDocs and Visiting Scholars

- Hao Pan, Beijing Institute of Petrochemical Technology, Fall 2014 - Fall 2015
- Longwen Gao, Fudan University, Fall 2014 - Spring 2015
- Xiaoming Li, Zhejiang Sci-Tech University, Fall 2015 - Spring 2016
- Xiaoyan Wei, Hubei University of Economics, Fall 2015 - Fall 2016
- Benxin Zhang, Guilin University of Electronic Technology, Fall 2016 - Spring 2017
- Liu Yang, Central South University, Fall 2017 - Spring 2018
- Feiyun Zhu, Walmart Lab, Fall 2016 - Spring 2018

Publication

Invited Book Chapters

1. [BookChapt'17] **Junzhou Huang**, Zheng Xu, “Accelerated Cell Detection with Sparse Convolution Kernels”, *Deep Learning and Convolutional Neural Networks for Medical Image Computing*, ISBN: 9783319429984, Springer, 2017
2. [BookChapt'16] **Junzhou Huang**, Yeqing Li, “Advanced Sparsity Techniques in Magnetic Resonance Imaging”, *Machine Learning and Medical Imaging*, ISBN: 978–0–12–804076–8, Elsevier Press, 2016.
3. [BookChapt'14] **Junzhou Huang**, Chen Chen and Xinyi Cui, “Sparsity Driven Background Modeling and Foreground Detection”, book chapter, *Handbook on Background Modeling and Foreground Detection for Video Surveillance*, CRC Press, 2014.
4. [BookChapt'10] 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, to appear 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.

Peer-reviewed Journal Papers

1. [TKDE'19] Peilin Zhao, Yifan Zhang, Min Wu, Steven C. H. Hoi, Mingkui Tan and **Junzhou Huang**, “Adaptive Cost-sensitive Online Classification”, *IEEE Transactions on Knowledge and Data Engineering*, Volume 31, No. 2, pp.214-228, February 2019.
2. [MedIA'18] Chen Chen, Lei He, Hongsheng Li and **Junzhou Huang**, “Fast Iteratively Reweighted Least Squares Algorithms for Analysis-Based Sparse Reconstruction”, *Medical Image Analysis*, Volume 49, pp.141-152, October 2018.

3. [NeuroInfor'18] Zheng Xu, Sheng Wang, Yeqing Li, Feiyun Zhu and **Junzhou Huang**, "PRIM: An Efficient Preconditioning Iterative Reweighted Least Squares Method for Parallel Brain MRI Reconstruction", *Neuroinformatics*, Volume 16, Issue 3-4, pp. 425-430, October 2018.
4. [TPAMI'18] Yeqing Li, Chen Chen, Fei Yang and **Junzhou Huang**, "Hierarchical Sparse Representation for Robust Image Registration", *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Volume 40, Issue 9, pp.2151-2164, September 2018.
5. [SPL'18] Xiaoming Huang, Yin Zheng, **Junzhou Huang** and Yujin Zhang, "A Minimum Barrier Distance Based Saliency Box for Object Proposals Generation", *IEEE Signal Processing Letters*, Volume 25, Issue 8, pp. 1126-1130, August 2018.
6. [TPAMI'18b] Yeqing Li, Wei Liu and **Junzhou Huang**, "Sub-Selective Quantization for Learning Binary Code in Large-Scale Image Search", *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Volume 40, Issue 6, pp. 1526-1532, June 2018.
7. [Neuro'18] Zhibin Zhu, Jiawen Yao, Zheng Xu, **Junzhou Huang** and Benxin Zhang, "A Simple Primal-dual Algorithm for Nuclear Norm and Total Variation Regularization", *Neurocomputing*, Volume 289, pp. 1-12, May 2018.
8. [MedIA'18] Jiawen Yao, Zheng Xu, Xiaolei Huang and **Junzhou Huang**, "An Efficient Algorithm for Dynamic MRI Using Low-rank and Total Variation Regularization", *Medical Image Analysis*, Volume 44, pp. 14-27, February 2018.
9. [SCI'17] Yuhong Wang, **Junzhou Huang**, Wei Li, Sheng Wang and Chuanfan Ding, "Specific and Intrinsic Sequence Patterns Extracted by Deep Learning from Intra-Protein Binding and Non-binding Peptide Fragments", *Scientific Reports*, November 2017.
10. [JMI'17] Faliu Yi, **Junzhou Huang**, Lin Yang, Yang Xie and Guanghua Xiao, "Automatic Extraction of Cell Nuclei from H&E-stained Histopathological Images", *Journal of Medical Imaging*, Volume 4, pp. 4-12, June 2017.
11. [JTO'17] Xin Luo, Xiao Zang, Lin Yang, **Junzhou Huang**, Faming Liang, Jaime Rodriguez Canales, Ignacio I. Wistuba, Adi Gazdar, Yang Xie, Guanghua Xiao, "Comprehensive Computational Pathological Image Analysis Predicts Lung Cancer Prognosis", *Journal of Thoracic Oncology*, Volume 12, pp.501-509, March 2017.
12. [Neuro'17] Ruogu Fang, Ajay Gupta, **Junzhou Huang**, Pina Sanelli, "TENDER: TENSOR Non-local Deconvolution Enabled Radiation Reduction in CT Perfusion", *NeuroComputing*, Volume 229, pp. 13-22, March 2017.
13. [MedIA'16] Menglin Jiang, Shaoting Zhang, **Junzhou Huang**, Lin Yang, Dimitris Metaxas, "Scalable Histopathological Image Analysis via Supervised Hashing with Multiple Features", *Medical Image Analysis*, Volume 34, pp. 3-12, December 2016.
14. [TPAMI'16] 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*, Volume 38, Issue 11, pp. 2212-2226, November 2016.
15. [MRI'16] Chen Chen, Yeqing Li, Leon Axel and **Junzhou Huang**, "Real Time Dynamic MRI by Exploiting Spatial and Temporal Sparsity", *Magnetic Resonance Imaging*, Volume 34, Issue 4, pp. 473-482, May 2016
16. [CMIG'15b] Ruogu Fang, Haodi Jiang, **Junzhou Huang**, "Tissue-Specific Sparse Deconvolution for Brain CT Perfusion", *Computerized Medical Imaging and Graphics*, Volume 46, pp. 64-72, December 2015.

17. [CMIG'15] Jinghao Zhou, Zhennan Yan, Giovanni Lasio, **Junzhou Huang**, Baoshe Zhang, Navesh Sharma, Karl Prado, Warren DSouza, "Automated Compromised right Lung Segmentation Method Using a Robust Atlas-based Active Volume Model with Sparse Shape Composition Prior in CT", *Computerized Medical Imaging and Graphics*, Volume 46, pp. 47-55, December 2015.
18. [TIP'15] Chen Chen, Yeqing Li, Wei Liu and **Junzhou Huang**, "SIRF: Simultaneous Satellite Image Registration and Fusion in A Unified Framework", *IEEE Transactions on Imaging Processing*, Vol. 24, No.11, November 2015.
19. [TC'15b] Lin Zhong, Qingshan Liu, Peng Yang, **Junzhou Huang** and Dimitris Metaxas, "Learning Multi-scale Active Facial Patches for Expression Analysis", *IEEE Transaction on Cybernetics*, Volume 45, Number 8, pp.1499-1510, August 2015.
20. [CVIU'15] Xi Peng, **Junzhou Huang**, Qiong Hu, Shaoting Zhang, Ahmed Elgammal and Dimitris Metaxas, "From Circle to 3-Sphere: Head Pose Estimation by Instance Parameterization", *Computer Vision and Image Understanding*, Volume 136, pp.92-102, July 2015.
21. [TC'15a] Xiang Yu, Shaoting Zhang, Zhenan Yan, Fei Yang, **Junzhou Huang**, Norah Dunbar, Matthew Jensen, Judee K. Burgoon and Dimitris N. Metaxas, "Is Interactional Dissynchrony a Clue to Deception? Insights from Automated Analysis of Nonverbal Visual Cues", *IEEE Transactions on Cybernetics*, Volume 45, Issue 3, pp. 506-520, March 2015.
22. [TMI'14] Chen Chen, Fenghua Tian, Hanli Liu and **Junzhou Huang**, "Diffuse Optical Tomography Enhanced by Clustered Sparsity for Functional Brain Imaging", *IEEE Transactions on Medical Imaging*, Volume 33, Issue 12, pp.2323-2331, December 2014.
23. [TPAMI'14] Hongsheng Li, **Junzhou Huang**, Shaoting Zhang and Xiaolei Huang, "Feature Matching with Affine-Function Transformation Models", *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Volume 36, Issue 12, pp. 2407-2422, December 2014.
24. [MRI'14b] **Junzhou Huang**, Chen Chen and Leon Axel, "Fast Multi-contrast MRI Reconstruction", *Magnetic Resonance Imaging*, Volume 32, Issue 10, pp. 1344-1352, December 2014.
25. [MRI'14a] Chen Chen and **Junzhou Huang**, "Exploiting the wavelet structure in Compressed Sensing MRI", *Magnetic Resonance Imaging*, Volume 32, Issue 10, pp. 1377-1389, December 2014.
26. [MedIA'14] Chen Chen and **Junzhou Huang**, "The Benefit of Tree Sparsity in Accelerated MRI", Accepted by *Medical Image Analysis*, Volume 18, Issue 6, pp. 834-842, August 2014.
27. [TSP'14] Chen Chen, Yeqing Li and **Junzhou Huang**, "Forest Sparsity for Multi-channel Compressive Sensing", *IEEE Transactions on Signal Processing*, Volume 62, Issue 11, pp. 2803-2813, June 2014.
28. [TPAMI'13] Baiyang Liu, **Junzhou Huang**, Casimir Kulikowski, Lin Yang, "Robust Visual Tracking Using Local Sparse Appearance Model and K-Selection", *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Volume 35, Issue 12, pp. 2968-2981, December 2013.
29. [CVIU'13] Shaoting Zhang, Yiqiang Zhan, Xinyi Cui, Mingchen Gao, **Junzhou Huang**, Dimitris Metaxas, "3D Anatomical Shape Atlas Construction using Mesh Quality Preserved Deformable Models", *Computer Vision and Image Understanding*, Special Issue on Shape Modeling in Medical Image, Volume 117, Issue 9, pp. 1061-1071, August 2013.

30. [TSMC'12] 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, pp. 838-849, June 2012.
31. [MedIA'12] Shaoting Zhang, Yiqiang Zhan, Maneesh Dewan, **Junzhou Huang**, Dimitris Metaxas and Xiang Zhou, "Toward Robust and Effective Shape Modeling: Sparse Shape Composition", *Medical Image Analysis*, Volume 16, Issue 1, pp. 265-277, January 2012.
32. [JMLR'11] **Junzhou Huang**, Tong Zhang and Dimitris Metaxas. "Learning with Structured Sparsity", *Journal of Machine Learning Research*, Volume 12, pp.3371-3412, December 2011.
33. [CVIU'11] **Junzhou Huang**, Shaoting Zhang, Hongsheng Li, Dimitris Metaxas, "Composite Splitting Algorithms for Convex Optimization", *Computer Vision and Image Understanding*, Volume 115, Issue 12, pp. 1610-1622, December 2011.
34. [MedIA'11] **Junzhou Huang**, Shaoting Zhang, Dimitris Metaxas, "Efficient MR Image Reconstruction for Compressed MR Imaging", *Medical Image Analysis*, Volume 15, Issue 5, pp.670-679, October 2011.
35. [GM'10] Shaoting Zhang, **Junzhou Huang** and Dimitris Metaxas, "Robust Mesh Editing Using Laplacian Coordinates". *Graphical Models*, Volume 73, Issue 1, pp.10-19, January 2011.
36. [AoS'10] **Junzhou Huang** and Tong Zhang, "The Benefit of Group Sparsity", *Annals of Statistics*, Volume 38, Number 4, pp.1978-2004, 2010.
37. [JCST'05] **Junzhou Huang**, Tieniu Tan, Li Ma, Yunhong Wang, "Phase Correlation Based Iris Image Registration Model", *Journal of Computer Science and Technology*, Volume 20, Number 2, pp.419-425, March 2005.

Peer-reviewed Conference Papers

1. [WWW'19] Jia Li, Yu Rong, Hong Cheng, Helen Meng, Wenbing Huang and **Junzhou Huang**, "Semi-Supervised Graph Classification: A Hierarchical Graph Perspective", *International World Wide Web Conference*, San Francisco, CA, USA, May 2019.
2. [AISTATS'19] Bo Liu, Xiaotong Yuan, Lezi Wang, Qingshan Liu, **Junzhou Huang**, Dimitris Metaxas, "Distributed Inexact Newton-type Pursuit for Non-convex Sparse Learning", In *Proc. of The 22nd International Conference on Artificial Intelligence and Statistics*, AISTATS'19, Naha, Okinawa, Japan, April 2019.
3. [AISTATS'19a] Yue Yu, Jiaxiang Wu and **Junzhou Huang**, "Exploring Fast and Communication-Efficient Algorithms in Large-scale Distributed Networks", In *Proc. of The 22nd International Conference on Artificial Intelligence and Statistics*, AISTATS'19, Naha, Okinawa, Japan, April 2019.
4. [AISTATS'19b] Zebang Shen, Hui Qian, Cong Fang, Peilin Zhao and **Junzhou Huang**, "Complexities in Projection-Free Stochastic Non-convex Minimization", In *Proc. of The 22nd International Conference on Artificial Intelligence and Statistics*, AISTATS'19, Naha, Okinawa, Japan, April 2019.
5. [AAAI'19] Lijie Fan, Wenbing Huang, Chuang Gan, **Junzhou Huang** and Boqing Gong, "Controllable Image-to-Video Translation: A Case Study on Facial Expression Generation", In *Proc. of The Thirty-Third AAAI Conference on Artificial Intelligence*, AAAI'19, Honolulu, Hawaii, USA, February 2019. (**Oral Presentation**)

6. [AAAI'19a] Lichen Wang, Jiaxiang Wu, Shaolun Huang, Lizhong Zheng, Xiangxiang Xu, Lin Zhang and **Junzhou Huang**, "An Efficient Approach to Informative Feature Extraction from Multimodal Data", In *Proc. of The Thirty-Third AAAI Conference on Artificial Intelligence*, AAAI'19, Honolulu, Hawaii, USA, February 2019.
7. [NIPS'18] Wenbing Huang, Tong Zhang, Yu Rong and **Junzhou Huang**, "Adaptive Sampling Towards Fast Graph Representation Learning", In *Proc. of the 32nd Annual Conference on Neural Information Processing Systems*, NIPS'18, Montreal, Canada, December 2018.
8. [NIPS'18a] Zhuangwei Zhuang, Mingkui Tan, Bohan Zhuang, Jing Liu, Jiezhong Cao, Qingyao Wu, **Junzhou Huang**, Jinhui Zhu, "Discrimination-aware Channel Pruning for Deep Neural Networks", In *Proc. of the 32nd Annual Conference on Neural Information Processing Systems*, NIPS'18, Montreal, Canada, December 2018.
9. [NIPS'18b] Xuguang Duan, Wenbing Huang, Chuang Gan, Jingdong Wang, Wenwu Zhu and **Junzhou Huang**, "Weakly Supervised Dense Event Captioning in Videos", In *Proc. of the 32nd Annual Conference on Neural Information Processing Systems*, NIPS'18, Montreal, Canada, December 2018.
10. [ACML'18] Yongluan Yan, Xinggang Wang, Xiaojie Guo, Jiemin Fang, Wenyu Liu and **Junzhou Huang**, "Deep Multi-instance Learning with Dynamic Pooling", In *Proc. of the 10th Asian Conference on Machine Learning*, ACML'18, Beijing, China, November 2018.
11. [ECCV'18] Peng Tang, Xinggang Wang, Angtian Wang, Yongluan Yan, Wenyu Liu, **Junzhou Huang** and Alan Yuille, "Weakly Supervised Region Proposed Network and Object Detection", In *Proc. of The 15th European Conference on Computer Vision*, ECCV'18, Munich, Germany, September 2018.
12. [BCB'18] Chaochao Yan, Jiawen Yao, Ruoyu Li, Zheng Xu and **Junzhou Huang**, "Weakly-supervised Deep Learning for Thoracic Disease Classification and Localization on Chest X-rays", In *Proc. of The 9th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics*, BCB'18, Washington DC, USA, September 2018.
13. [BCB'18a] Xiaoyu Zhang, Sheng Wang, Feiyun Zhu, Zheng Xu, Yuhong Wang and **Junzhou Huang**, "Seq3seq Fingerprint: Towards End-to-end Semi-supervised Deep Drug Discovery", In *Proc. of The 9th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics*, BCB'18, Washington DC, USA, September 2018.
14. [BCB'18b] Feiyun Zhu, Peng Liao, Xinliang Zhu, Jiawen Yao and **Junzhou Huang**, "Cohesion-driven Online Actor-Critic Reinforcement Learning for mHealth Intervention", In *Proc. of The 9th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics*, BCB'18, Washington DC, USA, September 2018.
15. [BCB'18c] Feiyun Zhu, Jun Guo, Ruoyu Li and **Junzhou Huang**, "Robust Actor-Critic Contextual Bandit for Mobile Health (mHealth) Interventions", In *Proc. of The 9th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics*, BCB'18, Washington DC, USA, September 2018.
16. [MICCAI'18] Ruoyu Li, Jiawen Yao, Xinliang Zhu, Yeqing Li and **Junzhou Huang**, "Graph CNN for Survival Analysis on Whole Slide Pathological Images", In *Proc. of the 20th Annual International Conference on Medical Image Computing and Computer Assisted Intervention*, MICCAI'18, Granada, Spain, September 2018.
17. [MICCAI'18a] Feiyun Zhu, Jun Guo, Zheng Xu, Peng Liao and **Junzhou Huang**, "Group-driven Reinforcement Learning for Personalized mHealth Intervention", In *Proc. of the*

20th Annual International Conference on Medical Image Computing and Computer Assisted Intervention, MICCAI'18, Granada, Spain, September 2018.

18. [ICML'18] Jiaxiang Wu, Weidong Huang, **Junzhou Huang** and Tong Zhang, "Error Compensated Quantized SGD and its Applications to Large-scale Distributed Optimization", In *Proc. of International Conference on Machine Learning, ICML'18, Stockholm, Sweden, July 2018.*
19. [ICML'18a] Ying Wei, Yu Zhang, **Junzhou Huang**, Qiang Yang, "Transfer Learning via Learning to Transfer", In *Proc. of International Conference on Machine Learning, ICML'18, Stockholm, Sweden, July 2018.*
20. [ICML'18b] Jiezhong Cao, Yong Guo, Qingyao Wu, Chunhua Shen, **Junzhou Huang**, Mingkui Tan, "Adversarial Learning with Local Coordinate Coding", ICML'18, Stockholm, Sweden, July 2018.
21. [KDD'18] Yifan Zhang, Peilin Zhao, Jiezhong Cao, Wenye Ma, **Junzhou Huang**, Qingyao Wu and Mingkui Tan, "Online Adaptive Asymmetric Active Learning for Budgeted Imbalanced Data", In *Proc. of ACM SIGKDD Conference on Knowledge Discovery and Data Mining, KDD'18, London, UK, August 2018.*
22. [CVPR'18] Lijie Fan, Wenbing Huang, Chuang Gan, Stefano Ermon, Boqing Gong and **Junzhou Huang**, "End-to-End Learning of Motion Representation for Video Understanding", In *Proc. of IEEE Conference on Computer Vision and Pattern Recognition, CVPR'18, Salt Lake, Utah, USA, June 2018. (Spotlight)*
23. [DASFAA'18] Siyuan Zhang, Yu Rong, Yu Zheng, Hong Cheng and **Junzhou Huang**, "Exploiting Ranking Consistency Principle in Representation Learning for Location Promotion", In *The 23rd International Conference on Database Systems for Advanced Applications, DASFAA'18, Gold Coast, Australia, May 2018.*
24. [WWW'18] Xiao Lin, Wenpeng Zhang, Min Zhang, Peilin Zhao, Wenwu Zhu, Jian Pei and **Junzhou Huang**, "Online Compact Convexified Factorization Machine", *International World Wide Web Conference, Lyon, France, April 2018.*
25. [AAAI'18] Ruoyu Li, Sheng Wang, Feiyun Zhu and **Junzhou Huang**, "Adaptive Graph Convolutional Neural Networks", In *Proc. of The Thirty-Second AAAI Conference on Artificial Intelligence, AAAI'18, New Orleans, USA, February 2018. (Oral Presentation)*
26. [NIPS'17] Wenbing Huang, Mehrtash Harandi, Tong Zhang, Lijie Fan, Fuchun Sun and **Junzhou Huang**, "Efficient Optimization for Linear Dynamical Systems with Applications to Clustering and Sparse Coding", In *Proc. of the 31st Annual Conference on Neural Information Processing Systems, NIPS'17, Long Beach, Los Angeles, California, USA, December 2017.*
27. [MICCAI'17] Jiawen Yao, Xinliang Zhu, Feiyun Zhu and **Junzhou Huang**, "Deep Correlational Learning for Survival Prediction from Multi-modality Data", In *Proc. of the 19th Annual International Conference on Medical Image Computing and Computer Assisted Intervention, MICCAI'17, Quebec City, Quebec, Canada, September 2017. (Oral Presentation)*
28. [CVPR'17] Xinliang Zhu, Jiawen Yao, Feiyun Zhu and **Junzhou Huang**, "WSISA: Making Survival Prediction from Whole Slide Pathology Images", In *Proc. of IEEE Conference on Computer Vision and Pattern Recognition, CVPR'17, Honolulu, Hawaii, USA, July 2017.*

29. [BCB'17] Zheng Xu, Sheng Wang, Feiyun Zhu and **Junzhou Huang**, "Seq2seq Fingerprint: An Unsupervised Deep Molecular Embedding for Drug Discovery", In *Proc. of The 8th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics*, BCB'17, Boston, MA, August 2017.
30. [ISBI'17] Sheng Wang, Ashwin Raju and **Junzhou Huang**, "Deep Learning Based Multi-label Classification for Surgical Tool Presence Detection in Laparoscopic Videos", In *Proc. of The International Symposium on Biomedical Imaging*, Melbourne, Australia, April 2017.
31. [AAAI'17] Zheng Xu and **Junzhou Huang**, "A General Efficient Hyperparameter-free Algorithm for Convolutional Sparse Learning", In *Proc. of The Thirty-first AAAI Conference on Artificial Intelligence*, AAAI'17, San Francisco, California, USA, February 2017.
32. [AAAI'17a] Li Shen, Wei Liu, **Junzhou Huang**, Yugang Jiang and Shiqian Ma, "Adaptive Proximal Average Approximation for Composite Convex Minimization", In *Proc. of The Thirty-first AAAI Conference on Artificial Intelligence*, AAAI'17, San Francisco, California, USA, February 2017.
33. [BIBM'16b] Xinliang Zhu, Jiawen Yao, Guanghua Xiao, Yang Xie, Jaime Rodriguez Canales, Edwin Parra, Carmen Behrens, Ignacio I. Wistuba, and **Junzhou Huang**, "Imaging-Genetic Data Mapping for Clinical Outcome Prediction via Supervised Conditional Gaussian Graphical Model", *IEEE International Conference on Bioinformatics and Biomedicine*, BIBM'16, Shenzhen, China, December 2016. (**Oral Presentation**)
34. [BIBM'16] Xinliang Zhu, Jiawen Yao, and **Junzhou Huang**, "Deep Convolutional Neural Network for Survival Analysis with Pathological Images", *IEEE International Conference on Bioinformatics and Biomedicine*, BIBM'16, Shenzhen, China, December 2016.
35. [ICPR'16] Zheng Xu, Yeqing Li and **Junzhou Huang**, "Accelerated Sparse Optimization for Missing Data Completion", In *Proc. of the 23rd International Conference on Pattern Recognition*, ICPR'16, Cancun, Mexico, December 2016.
36. [MICCAI'16c] Zheng Xu, **Junzhou Huang**, "Detecting 10,000 Cells in One Second", In *Proc. of the 19th Annual International Conference on Medical Image Computing and Computer Assisted Intervention*, MICCAI'16, Athens, Greece, October 2016.
37. [MICCAI'16b] Sheng Wang, Jiawen Yao, Zheng Xu, **Junzhou Huang**, "Subtype Cell Detection with an Accelerated Deep Convolution Neural Network", In *Proc. of the 19th Annual International Conference on Medical Image Computing and Computer Assisted Intervention*, MICCAI'16, Athens, Greece, October 2016.
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Peer-reviewed Workshop Papers

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2. [CDNNRIA'18] Jiaxiang Wu, Yao Zhang, Haoli Bai, Huasong Zhong, Jinlong Hou, Wei Liu, Wenbing Huang and **Junzhou Huang**, “PocketFlow: An Automated Framework for Compressing and Accelerating Deep Neural Networks”, In *The NIPS 2018 Workshop on Compact Deep Neural Networks with Industrial Applications*, Montreal, Canada, December 2018.
3. [MLMI'18] Feiyun Zhu, Xinliang Zhu, Sheng Wang, Jiawen Yao, Zhichun Xiao and **Junzhou Huang**, “Robust Contextual Bandit via the Capped- L_2 Norm for Mobile Health Intervention”, In *The 9th International Workshop on Machine Learning in Medical Imaging*, MLMI'18, Granada, Spain, September 2018.
4. [CVPRW'16] Xi Peng, **Junzhou Huang**, Dimitris Metaxas, “Sequential Face Alignment via Person-Specific Modeling in the Wild”, In *Proc. of the IEEE Conference on Computer Vision and Pattern Recognition Workshops*, Las Vegas, USA, June 2016
5. [MLMI'15] Jiawen Yao, Dheeraj Ganti, Xin Luo, Guanghua Xiao, Yang Xie, Shirley Yan and **Junzhou Huang**, “Computer-assisted Diagnosis of Lung Cancer Using Quantitative Topology Features”, In *The 6th International Workshop on Machine Learning in Medical Imaging*, MLMI'15, Munich, Germany, October 2015.
6. [PMI'15c] Zheng Xu, **Junzhou Huang**, “Efficient Lung Cancer Cell Detection with Deep Convolution Neural Network”, In *The 1st International Workshop on Patch-based Techniques in Medical Imaging*, PMI'15, Munich, Germany, October 2015.
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9. [MCV'15] Ruogu Fang, Ming Ni, **Junzhou Huang**, Qianmu Li, Tao Li, “A Efficient 4D Non-Local Tensor Total-Variation for Low-Dose CT Perfusion Deconvolution”, In *The MICCAI Workshop on Medical Computer Vision: Algorithms for Big Data*, MCV'15, Munich, Germany, October 2015.
10. [NILM'14] Yeqing Li, Zhongxing Peng, **Junzhou Huang**, Zhilin Zhang, Jae Hyun Son, “Energy Disaggregation via Hierarchical Factorial HMM”, In *The second International Workshop on Non-Intrusive Load Monitoring*, NILM'14, Austin, TX, USA, June 2014.
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13. [MeshMed'12] Xinyi Cui, Shaoting Zhang, Yiqiang Zhan, Mingchen Gao, **Junzhou Huang** and Dimitris Metaxas, "3D Anatomical Shape Atlas Construction using Mesh Quality Preserved Deformable Models", In *MICCAI Workshop on Mesh Processing in Medical Image Analysis*, MeshMed'12, Nice, France, October 2012.
14. [SPIE'10] Shaoting Zhang, **Junzhou Huang**, Wei Wang, Xiaolei Huang, Dimitris Metaxas, "Cervigram Image Segmentation Based On Reconstructive Sparse Representations", In *Proc. of SPIE, Medical Imaging: Image Processing*, SPIE'10, San Diego, California, USA, February 2010. (**Oral Presentation**)
15. [MIAAB'06] **Junzhou Huang**, Xiaolei Huang, Dimitris Metaxas, Debarata Banerjee, "3D Tumor Shape Reconstruction from 2D Bioluminescence Images and Registration with CT Images", In *The 1st Workshop on Microscopic Image Analysis with Applications in Biology*, MIAAB'06, Washington DC, USA, April 2006. (**Oral Presentation**)

Patent

- A New Algorithm for MRI Reconstruction, US 20120155730 A1, US 8548218, October 2013.
- Method and Apparatus for Multiple Image Registration in the Gradient domain, US 9466108, October 2016
- Method and Apparatus for Image Registration in the Gradient Domain, US 9582882, February 2017
- Method, Apparatus and Computer Program Product for Robust Image Registration Based on Deep Sparse Representation, US20170026630A1, February 2017

Invited Talks

- "3D Tumor Shape Reconstruction from 2D Bioluminescence Images", IEEE International Symposium on Biomedical Imaging: From Nano to Macro, Washington, USA, April 2006.
- "Optimization and Learning for Registration of Moving Dynamic Textures", International Conference on Computer Vision, Rio de Janeiro, Brazil, October 2007.
- "Learning With Structure Sparsity", International Conference on Machine Learning, Montreal, Canada, June 2009.
- "Learning With Dynamic Group Sparsity", International Conference on Computer Vision, Kyoto, Japan, October 2009.
- "Sparse Learning and Beyonds", Institute of Computing Technology, Chinese Academy of Science, Beijing, China, November 2009.
- "Structure Sparsity for Compressive Sensing", Institute of Electronics, Chinese Academy of Science, Beijing, China, November 2009.
- "Structured Sparsity and Its Applications on Biomedical Imaging Computer Vision", Siemens Corporate Research, Princeton, NJ, USA, August 2010.
- "Sparse Learning for Biomedical Imaging and Informatics", Siemens Medical Solutions, Malvern, PA, USA, August 2010.

- “Structure Sparsity for Dynamic Data Analysis”, ExxonMobil Corporate Strategic Research, Clinton, NJ, USA, September 2010.
- “Efficient MR Image Reconstruction for Compressed MR Imaging”, 13th Annual International Conference on Medical Image Computing and Computer Assisted Intervention, Beijing, China, September 2010.
- “Structured Sparsity and Its Applications”, 6th Annual Watson Workshop Emerging Leaders in Multimedia and Signal Processing, Hawthorne NY, USA, October, 2010.
- “Structured Sparsity and Its Applications on Medical Imaging and Machine Vision”, Department of Computer Science and Engineering, University of Texas at Arlington, TX, USA, March 2011.
- “Sparsity: From Theory to Applications in Machine Learning and Medical Imaging”, Department of Computer Science, Illinois Institute of Technology, Chicago, IL, USA, March 2011.
- “Sparsity Techniques and Their Applications”, NAVTEQ, Chicago, IL, USA, April 2011.
- “Sparsity and Deformable Models for Improved Medical Imaging and Diagnosis”, SPIE on Wavelets and Sparsity XIV, San Diego, CA, USA, August 2011.
- “Fast Composite Splitting Algorithm for Linear Composite Regularization”, SIAM Conference on Imaging Science, Philadelphia, PA, USA, May 2012.
- “Structured Sparsity: When Statistical Learning Met Signal Processing”, Department of Electrical Engineering, University of Texas at Arlington, TX, USA, April 2012.
- “Biomedical Imaging and Learning: When Statistical Learning Met Bio-Applications”, Department of Bioengineering, University of Texas at Arlington, TX, USA, August 2012.
- “Low-frequency Energy Disaggregation”, Samsung Research America, Dallas, TX, USA, March 2013.
- “ $\mathcal{O}(1)$ Algorithms for Overlapping Group Sparsity”, INFORMS Optimization Society Conference, Houston, TX, USA, March 2014.
- “Multichannel Compressed Sensing with Forest Sparsity”, SIAM Conference on Optimization, San Diego, CA, USA, May 2014.
- “Preconditioning for Accelerated Iteratively Reweighted Least Squares in Structured Sparsity Reconstruction”, IEEE Conference on Computer Vision and Pattern Recognition, Columbus, Ohio, USA, June 2014.
- “Recent Algorithm Development in Diffusion Optical Imaging”, Department of Bioengineering, University of Texas at Arlington, TX, USA, September 2014.
- “Big Image-Omics Data Analytics for Clinical Outcome Prediction”, Department of Clinical Science, University of Texas Southwestern Medical Center, Dallas, TX, USA, November 2015.
- “Integration of Pathological Images and Cell Profiling Data for Clinical Outcome Prediction”, National Center for Advancing Translational Sciences, National Institutes of Health, Bethesda, Maryland, USA, January 2016.
- “Biomarker Discovery from Histopathology Images for Clinical Outcome Prediction”, Radiology and Imaging Sciences, National Institutes of Health, Bethesda, Maryland, USA, June 2016.

- “Multi-modal Biomarker Discovery from Imaging Genomic Data”, School of Medicine, University of Maryland, Baltimore, USA, June 2016.
- “Big Imaging-Genomics Data Analytics for Clinical Outcome Prediction”, CVPR Workshop on Medical Computer Vision, Las Vegas, USA, July 2016.
- “Clinical Imaging Biomarker Discovery for Survival Prediction on Lung Cancer Imaging Genetic Data”, the 19th Annual International Conference on Medical Image Computing and Computer Assisted Intervention, Athens, Greece, October 2016.
- “Sparse Learning for Big Medical Data”, Department of Bioinformatics, University of Texas Southwestern Medical Center, Dallas, TX, USA, April 2017.
- “Big Image-Omics Data Analytics for Clinical Outcome Prediction”, GPU Technology Conference, Silicon Valley, May 2017.

Professional Activities

- **Member**

Institute of Electrical and Electronics Engineers (IEEE)
 Society for Industrial and Applied Mathematics (SIAM)
 The Medical Image Computing and Computer Assisted Intervention Society (MICCAI)
 Association for Advancement of Artificial Intelligence (AAAI)

- **Journal Reviewer**

Annals of Statistics,
 SIAM Journal on Image Science,
 IEEE Signal Processing Letters,
 IEEE Transaction on Multimedia,
 IEEE Transaction on Signal Processing,
 IEEE Transaction on Image Processing,
 IEEE Transactions on Biomedical Engineering,
 IEEE Transactions on Knowledge and Data Engineering,
 IEEE Transactions on Pattern Analysis and Machine Intelligence,
 IEEE Transactions on Circuits and Systems for Video Technology,
 IEEE Transactions on Neural Systems and Rehabilitation Engineering,
 ACM Transactions on Multimedia Computing, Communications and Applications,
 Journal of Optics Express,
 Journal of NeuroComputing,
 Journal of Signal Processing,
 Journal of Medical Image Analysis,
 Journal of Machine Learning Research,
 Journal of Machine Vision and Applications,
 Journal of Signal Image and Video Processing,
 Journal of Computer Vision and Image Understanding,
 Journal of Biomedical Signal Processing and Control,
 Journal of Computational Statistics and Data Analysis,
 Journal of Visual Communication and Image Representation

- **Conference Program Committee or Reviewer**

International Conference on Computer Vision, 2007-2009
 IEEE Conference on Computer Vision and Pattern Recognition, 2008
 International Conference on Tools with Artificial Intelligence, 2009
 European Conference on Computer Vision, 2010

Pacific-Rim Symposium on Image and Video Technology, 2011
International Conference on Functional Imaging and Modeling of the Heart, 2011
International Workshop on High Performance Computing for Biomedical Image Analysis, 2014
International Conference on Medical Image Computing and Computer Assisted Intervention, 2011-2019
International Symposium on Biomedical Imaging, 2016
Annual Conference on Neural Information Processing Systems, 2013-2019
International Conference on Machine Learning, 2013-2019

- **Conference Program / Session / Area Chair**

The Sixth International Conference on Functional Imaging and Modeling of the Heart, New York, USA, May 2011.
The MICCAI Workshop on Sparsity Techniques in Medical Imaging, Nice, France, October 2012.
The 22th International Conference on Pattern Recognition, Stockholm, Sweden, August 2014
The 18th International Conference on Medical Image Computing and Computer Assisted Intervention, Munich, Germany, October 2015
The 30th AAAI Conference on Artificial Intelligence, San Francisco, California, USA, February 2017.
The 20th International Conference on Medical Image Computing and Computer Assisted Intervention, Quebec, Canada, September 2017

- **Grant Panel Member and Reviewer**

National Science Foundation, Smart and Connected Health, 2015
National Science Foundation, Small Business Innovation Research, 2015
National Science Foundation, Information Integration and Informatics, 2015
National Science Foundation, Smart and Connected Health, 2016
National Science Foundation, Information Integration and Informatics, 2017

- **Outreach Activity**

Guest Speakers and Demo Demonstration

Summer Camp for Middle School Students, Arlington, June 2013
Summer Camp for Middle School Girls, Arlington, July 2013
Summer Camp for Middle School Students, Arlington, July 2014
Summer Camp for Middle School Girls, Arlington, July 2014
Summer Camp for Middle School Students, Arlington, July 2015
Summer Camp for Middle School Students, Arlington, June 2016

- **Department Service**

Member of the Ph.D. Admission Committee, (Fall 2012-Spring 2014), CSE, UTA.
Member of the Master Admission Committee, (Fall 2011- Spring 2012), CSE, UTA.
Member of the Enrollments ad hoc Committee (Fall 2011- Spring 2012), CSE, UTA.
Member of the Visiting Appointments Committees (Fall 2014-now), CSE, UTA.
Member of the Quality Assurance Committees (Fall 2014-now), CSE, UTA.

Citations

- **Google Scholar Citations Until February 17, 2019**

- Total Citations: **5750**
- Total Publications: **170**

- H-index: **30**
- I10-index: **88**
- Web <http://scholar.google.com/citations?user=X7KrguAAAAAJ&hl=en>

- **≥ 400 Citations in Google Scholar**

- **(Cited by 496)** “Learning with structured sparsity”, **J Huang**, T Zhang and D Metaxas, *Journal of Machine Learning Research*, Volume 12, pp. 3371-3412, 2011.
- **(Cited by 425)** “The benefit of group sparsity”, **J Huang** and T Zhang, *The Annals of Statistics*, 38(4), pp. 1978-2004, 2010.
- **(Cited by 476)** “Robust tracking using local sparse appearance model and k-selection”, B Liu, **J Huang**, L Yang and C Kulikowsk, *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Volume 35, Issue 12, pp. 2968-2981, December 2013.