

## Zhangyang (Atlas) Wang

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CONTACT	Email: atlaswang@tamu.edu Office Address: 328C H.R. Bright Building, College Station, TX, 77843-3112 Office Phone: 979-845-7977	Web: atlaswang.com
EDUCATION	<b>University of Illinois at Urbana-Champaign (UIUC)</b> Ph.D., Electrical and Computer Engineering (ECE), 2016 <ul style="list-style-type: none"><li>• Thesis Topic: <i>Task-Specific and Interpretable Feature Learning</i></li><li>• Advisor: Professor Thomas S. Huang</li></ul> <b>University of Science and Technology of China (USTC)</b> B.E., Electronic Engineering and Information Science (EEIS), 2012	
PROFESSIONAL EXPERIENCE	<b>Assistant Professor</b> Department of Computer Science and Engineering, Texas A&M University (TAMU), College Station, TX <b>Research Scientist</b> Department of Industrial and Systems Engineering, University of Washington (UW), Seattle, WA <b>Research Fellow</b> Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana-Champaign, Urbana, IL <b>Visiting Researcher</b> Department of Electrical and Computer Engineering, University of Minnesota (UMN), Minneapolis, MN <b>Research Assistant</b> Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana-Champaign, Urbana, IL Supervisor: Prof. Thomas S. Huang <b>Research Intern</b> Cloud Computing and Storing (CCS) group, Microsoft Research, Redmond, WA Supervisors: Dr. Jin Li, Dr. Lei Zhang, Dr. Yuxiao Hu <b>Research Intern</b> Imagination Lab, Adobe Research, San Jose, CA Supervisors: Dr. Hailin Jin, Dr. Jianchao Yang, et. al. <b>Research Intern</b> US Army Research Laboratory, Adelphi, MD Supervisor: Dr. Nasser Nasrabadi <b>Research Mentor</b> P.U.R.E research program, University of Illinois at Urbana-Champaign, Urbana, IL <b>Research Assistant</b> Multimedia Computing and Communication Lab, University of Science and Technology of China, Hefei, China Supervisors: Prof. Houqiang Li, Prof. Qing Ling, Prof. Chang Wen Chen, et. al.	Aug 2017 to present Feb 2017 to Jul 2017 Aug 2016 to Dec 2016 Jul 2016 to Aug 2016 Aug 2012 to Jul 2016 May 2015 to Aug 2015 May 2014 to Aug 2014 May 2013 to Aug 2013 Aug 2012 to May 2013 Aug 2010 to Jul 2012
RESEARCH INTERESTS	<ul style="list-style-type: none"><li>• <i>Machine Learning</i>. <b>Recent Topics:</b><ul style="list-style-type: none"><li>– <i>Deep learning</i>: training stability; model interpretability; adaptive network architecture; network compression; energy-efficient learning; generative models</li></ul></li></ul>	

- *Sparse and low-rank models*: solving inverse problems via learning-based approaches with guarantees; sparse learning for energy-efficient models
- Clustering and quantization theory; subspace models
- *Computer Vision & Image Processing. Recent Topics*:
  - *Visual recognition*: objects, scenes, actions and gestures, styles and emotions
  - *Image and video restoration*: super resolution, deblurring, denoising, de-compression; enhancement of visually degraded outdoor images (haze, rain, low light, etc.)
  - *Medical image analysis*: recent focus on brains images for Alzheimer’s disease
  - Object detection, tracking and semantic segmentation, person re-identification
- *Vision + X. Recent Topics of “X”*:
  - Smart transportation; UAVs and autonomous driving
  - Smart city and urban informatics; privacy in IoT applications
  - Non-obtrusive health sensing; biomarker discovery

SELECTED  
HONORS

Research Awards

- ECCV 2018 ChaLearn Challenge Track 3 Rank 2 Winner July 2018
- CVPR 2018 UG2 Prize Challenge Winner May 2018
- Lenovo AI Innovation Challenge Winner Oct 2017
- Amazon Catalyst Innovation Award Finalist, UW Feb 2017
- Dissertation Completion Fellowship, UIUC Graduate College<sup>1</sup> May 2016
- Thomas and Margaret Huang Award for Graduate Research<sup>2</sup>, UIUC Apr 2016
- AAAI 2016 Best Presentation Award Finalist Jan 2016
- Baidu Research Fellowship<sup>3</sup> Nov 2015
- Cognitive Science/Artificial Intelligence Award, UIUC May 2015
- Fall 2012 P.U.R.E. Symposium Audience Favorite Award, UIUC Dec 2012
- Outstanding Undergraduate Research Program Scholarship, USTC Oct 2011
- Honorable Winner of Mathematical Contest in Modeling (MCM) Apr 2011

Merit-based Scholarships

- Chinese Government Award for Outstanding Graduates Abroad Mar 2016
- Outstanding Graduate Scholarship, Anhui Province, P.R.China Apr 2012
- Outstanding Student Scholarship, USTC 2008, 2009, 2010, 2011

Travel Awards

- Invited Participant, Microsoft Research Faculty Summit Aug 2018
- Invited Presenter, CCC Computing Research Symposium Oct 2017
- ICCV 2017 Young Researcher Travel Award Aug 2017
- CVPR 2016 Doctoral Consortium Apr 2016
- AAAI Scholarship Dec 2015
- ACM MM 2015 Travel Award Aug 2015
- CVPR 2015 Google Travel Award Jun 2015

Media Coverage

- “Doctoral students win Computer Vision and Pattern Recognition Prize Challenge”, *TAMU CSE Department News*, Jul 2018.
- “How Artificial Intelligence Will Affect Opportunity”, *The Battalion*, Dec 2017.

<sup>1</sup>As the only recipient from the ECE department. In 2016, 29 Ph.D. students from 27 departments were selected for the prestigious fellowship, by UIUC graduate college.

<sup>2</sup>A university-level distinction that annually recognizes research in Human-Computer Interaction.

<sup>3</sup>A highly competitive fellowship program that provides two years of financial support for Ph.D. students in computer science. Awarded among a total of 10 recipients worldwide.

- “Wang presents at Lenovo AI Innovation Challenge and Computing Community Consortium”, *TAMU CSE Department News*, Dec 2017.
- “Atlas Wang recognized by Chinese government, Baidu, and Illinois”, *UIUC ECE Department News*, highlighting my research accomplishments, Jul 2016.
- “Photoshop gets Shazam for fonts artificial intelligence tool”, *BBC News*, May 2016.
- “Adobe Photoshop unveils artificial intelligence tool to identify fonts from 20,000 typefaces”, *International Business Times*, May 2016.
- “How Adobe Sparks Innovation by Paying People to Fail”, *Fortune*, Apr 2016.
- “Wang develops font recognition system for Adobe”, *UIUC ECE Department News*, highlighting my fruitful collaboration with Adobe, Dec 2015.
- More media coverage sources available upon requests: YouTube, Twitter, Nvidia Blog, Adobe Blog, UIUC Alumni Magazine, CNET.com, Business Spectator, etc.

#### Software Products

- DeepFont, an *Adobe Photoshop*<sup>®</sup> built-in feature, as one of its leading contributors. Please refer to the [official Photoshop manual](#).
- *Microsoft Prajna*<sup>®</sup> Distributed Machine Learning ToolBox, as one of its co-contributors.

#### Research Funds

- Proudly funded by NSF, DARPA, multiple industrial grants, and a TAMU X-grant, since 2017, with the total exceeding \$2.5 million. PI for the most.
- Detailed information available upon request.

#### JOURNAL PUBLICATIONS

1. B. Li\*, W. Ren, D. Fu, D. Tao, D. Feng, W. Zeng, and **Z. Wang**, “Benchmarking Single Image Dehazing and Beyond”, *IEEE Transactions on Image Processing (TIP)*, 2018. <sup>4</sup>
2. A. Samareh, Y. Jin, **Z. Wang**, X. Chang and S. Huang, “Detect Depression from Communication: How Computer Vision, Signal Processing, and Sentiment Analysis Join Forces”, *IJSE Transactions on Healthcare Systems Engineering*, 2018.
3. D. Liu, Z. Wang, Y. Fan, X. Liu, **Z. Wang**, S. Chang, X. Wang, and T. Huang, “Learning Temporal Dynamics for Video Super-Resolution: A Deep Learning Approach”, *IEEE Transactions on Image Processing (TIP)*, vol. 27, no. 7, pp. 3432-3445, 2018.
4. X. Wang, B. Fan, S. Chang, **Z. Wang**, X. Liu, D. Tao, and T. Huang, “Greedy Batch-based Minimum-cost Flows for Tracking Multiple Objects”, *IEEE Transactions on Image Processing (TIP)*, vol. 26, no. 10, pp. 4765-4776, Oct. 2017.
5. **Z. Wang**, Y. Yang, Z. Wang, S. Chang, J. Yang and T. Huang, “Learning Super-Resolution Jointly from External and Internal Examples”, *IEEE Transactions on Image Processing (TIP)*, vol. 24, no. 11, pp. 4359-4371, Nov. 2015.
6. **Z. Wang**, N. Nasrabadi, and T. Huang, “Semi-supervised Hyperspectral Classification using Task-driven Dictionary Learning with Regularization”, *IEEE Transactions on Geosciences and Remote Sensing (TGRS)*, vol. 56, pp. 1161-1173, Mar. 2015.
7. **Z. Wang**, H. Li, Q. Ling, and W. Li, “Robust Temporal-Spatial Decomposition and Its Applications in Video Processing”, *IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)*, vol. 23, no. 3, Mar. 2013.
8. H. Li, Z. Lu, **Z. Wang**, and W. Li, “Detection of Blotch and Scratch in Video Based on Video Decomposition”, *IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)*, vol. 23, no. 11, Nov. 2013.

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<sup>4</sup>\* denotes that the first author is a student or mentee (co-)advised by Z. Wang.

- Z. Yu, H. Li, **Z. Wang**, Z. Hu, and C. Chen, “Multi-level Video Frame Interpolation: Exploiting the Interactions”, *IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)*, vol. 23, no. 7, Jul. 2013.

BOOKS &  
CHAPTERS

- Z. Wang, J. Yang, H. Zhang, **Z. Wang**, Y. Yang, D. Liu and T. Huang, “Sparse Coding and Its Applications in Computer Vision”, *World Scientific Books. ISBN: 978-981-4725-04-0*.<sup>5</sup>
- Z. Wang**, et.al., Chapter “Deep Learning for Font Recognition and Retrieval”, in the book “Applied Cloud Deep Semantic Recognition: Advanced Anomaly Detection”, *CRC Press-Taylor & Francis. ISBN: 978-135-1119-02-3*.
- Z. Wang**, Y. Fu, and T. Huang, “Deep Learning through Sparse and Low-Rank Modeling”, *Elsevier*, preprint.

SELECTED  
CONFERENCE  
PUBLICATIONS

- X. Chen\*, J. Liu, **Z. Wang**, and W. Yin, “Theoretical Linear Convergence of Unfolded ISTA and Its Practical Weights and Thresholds”, *In Proceedings of Advances in Neural Information Processing Systems (NIPS)*, 2018.
- N. Bansal\*, X. Chen\*, and **Z. Wang**, “Can We Gain More from Orthogonality Regularizations in Training Deep Networks?”, *In Proceedings of Advances in Neural Information Processing Systems (NIPS)*, 2018.
- Z. Wu\*, **Z. Wang**, Z. Wang, and H. Jin, “Towards Privacy-Preserving Visual Recognition via Adversarial Training: A Pilot Study”, *In Proceedings of European Conference on Computer Vision (ECCV)*, 2018.
- J. Wu\*, Y. Wang, Z. Wu\*, **Z. Wang**, A. Veeraraghavan, and Y. Lin, “Deep  $k$ -Means: Re-Training and Parameter Sharing with Harder Cluster Assignments for Compressing Deep Convolutions”, *In Proceedings of International Conference on Machine Learning (ICML)*, 2018.
- M. Sun, I. Baytas, L. Zhan, **Z. Wang**, and J. Zhou, “Subspace Network: Deep Multi-Task Censored Regression for Modeling Neurodegenerative Diseases”, *In Proceedings of ACM Conference on Knowledge Discovery and Data Mining (KDD)*, 2018.
- D. Liu, B. Wen, X. Liu, **Z. Wang**, and T. Huang, “When Image Denoising Meets High-Level Vision Tasks: A Deep Learning Approach”, *In Proceedings of International Joint Conferences on Artificial Intelligence (IJCAI)*, 2018.
- B. Li\*, X. Peng, **Z. Wang**, J. Xu, and D. Feng, “End-to-End United Video Dehazing and Detection”, *In Proceedings of the 32-th AAAI Conference on Artificial Intelligence (AAAI)*, 2018.
- B. Li\*, X. Peng, **Z. Wang**, J. Xu, and D. Feng, “AOD-Net: All-in-One Dehazing Network”, *In Proceedings of IEEE International Conference on Computer Vision (ICCV)*, 2017.
- D. Liu, Z. Wang, Y. Fan, X. Liu, **Z. Wang**, S. Chang, and T. Huang, “Robust Video Super-Resolution with Learned Temporal Dynamics”, *In Proceedings of IEEE International Conference on Computer Vision (ICCV)*, 2017.

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<sup>5</sup>Z. Wang is the sole author of: Chapter 8 “Hyper-Spectral Image Modeling”, as well as a major co-author of Chapter 3 “Image Super Resolution” and Chapter 6 “Clustering”.

10. B. Cheng\*, **Z. Wang**, Z. Zhang, Z. Li, D. Liu, J. Yang, S. Huang, and T. Huang, “Robust Emotion Recognition from Low Quality and Low Bit Rate Video: A Deep Learning Approach”, In *Proceedings of the 7-th Conference on Affective Computing and Intelligent Interaction (ACII)*, 2017.
11. **Z. Wang**, J. Liu, S. Huang, X. Wang, and S. Chang, “Transformed Anti-Sparse Learning for Unsupervised Hashing”, In *Proceedings of British Machine Vision Conference (BMVC)*, 2017.
12. **Z. Wang**, S. Huang, J. Zhou, and T. Huang, “Doubly Sparsifying Network”, In *Proceedings of International Joint Conferences on Artificial Intelligence (IJCAI)*, 2017.
13. **Z. Wang**, S. Chang, Y. Yang, D. Liu, and T. Huang, “Studying Very Low Resolution Recognition Using Deep Networks”, In *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2016.
14. **Z. Wang**, D. Liu, S. Chang, Q. Ling, Y. Yang, and T. Huang, “ $D^3$ : Deep Dual-Domain Based Fast Restoration of JPEG-Compressed Images”, In *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2016.
15. **Z. Wang**, S. Chang, Y. Yang, Q. Ling, and T. Huang, “Learning A Deep  $\ell_\infty$  Encoder for Hashing”, In *Proceedings of International Joint Conferences on Artificial Intelligence (IJCAI)*, 2016.
16. **Z. Wang**, S. Chang, J. Zhou, M. Wang, and T. Huang, “Learning A Task-Specific Deep Architecture for Clustering”, In *Proceedings of SIAM Conference on Data Mining (SDM)*, 2016.
17. **Z. Wang**, Q. Ling, and T. Huang, “Learning Deep  $\ell_0$  Encoders”, In *Proceedings of the 30-th AAAI Conference on Artificial Intelligence (AAAI)*, 2016.
18. **Z. Wang**, J. Yang, H. Jin, E. Shechtman, A. Agarwala, J. Brandt, and T. Huang, “DeepFont: Recognize Your Font From An Image”, In *Proceedings of ACM International Conference on Multimedia (ACM MM)*, 2015. [Full Paper]
19. **Z. Wang**, Y. Yang, S. Chang, J. Li, S. Fong, and T. Huang, “A Joint Optimization Framework of Sparse Coding and Discriminative Clustering”, In *Proceedings of International Joint Conferences on Artificial Intelligence (IJCAI)*, 2015.
20. Y. Yang, **Z. Wang**, J. Yang, J. Han, and T. Huang, “Regularized  $\ell_1$ -Graph for Data Clustering”, In *Proceedings of British Machine Vision Conference (BMVC)*, 2014.

PREPRINTS

1. X. Zhang\*, **Z. Wang**, D. Liu, and Q. Ling, “DADA: Deep Adversarial Data Augmentation for Extremely Low Data Regime Classification”, *arXiv: 1809.00981*, 2018.
2. D. Liu, B. Wen, J. Jiao, X. Liu, **Z. Wang**, and T. Huang, “Connecting Image Denoising and High-Level Vision Tasks via Deep Learning”, *submitted to IEEE Transactions on Image Processing (TIP)*, 2018.
3. Y. Liu, G. Zhao, B. Gong, Y. Li, R. Raj, N. Goel, S. Kesav, S. Gottimukkala, **Z. Wang**, W. Ren and D. Tao, “Improved Techniques for Learning to Dehaze and Beyond: A Collective Study”, *arXiv:1807.00202*, 2018.
4. M. Karimi, D. Wu, **Z. Wang** and Y. Shen, “DeepAffinity: Interpretable Deep Learning of Compound-Protein Affinity through Unified Recurrent and Convolutional Neural Networks”, *submitted to Bioinformatics*, 2018.

5. **Z. Wang**, H. Xu, H. Yang, D. Liu and J. Liu, “Learning Simple Thresholded Features with Sparse Support Recovery”, *submitted to IEEE Transactions on Signal Processing (TSP)*, 2018.
6. K. Sun\*, **Z. Wang**, D. Liu, R. Liu and Z. Zha, “ $\ell_p$ -Norm Constrained Coding With Frank-Wolfe Network”, *submitted to IEEE Transactions on Signal Processing (TSP)*, 2018.
7. D. Liu, B. Cheng\*, **Z. Wang**, H. Zhang, and T. Huang, “Enhance Visual Recognition under Adverse Conditions via Deep Networks”, *submitted to IEEE Transactions on Image Processing (TIP)*, 2017.
8. B. Li\*, X. Peng, **Z. Wang**, J. Xu, and D. Feng, “An All-in-One Network for Dehazing and Beyond”, *submitted to IEEE Transactions on Multimedia (TMM)*, 2017.

OTHER  
PUBLICATIONS

1. P. Zhu, ... , **Z. Wang**, ... , et. al. “VisDrone-DET 2018: The Vision Meets Drone Object Detection in Image Challenge Results”, *IEEE ECCV Vision Meets Drone Workshop (ECCV VisDrone)*, 2018. [Challenge Report]
2. R. Prabhu, X. Yu, **Z. Wang**, D Liu, and A Jiang, “U-Finger: Multi-Scale Dilated Convolutional Network for Fingerprint Image Denoising and Inpainting”, *ECCV Chalearn Looking at People Satellite Workshop (ECCV ChaLearn)*, 2018.
3. J. Shen\*, S. Wang\*, and **Z. Wang**, “Growing Deep Forests with Soft Routing and Learned Connectivity”, *ICDM Workshop on Developmental Learning (ICDM DELL)*, 2018.
4. M. Baig, J. Varghese, and **Z. Wang**, “MusicMapp: A Deep Learning Based Solution for Music Exploration and Visual Interaction”, *In ACM International Conference on Multimedia (ACM MM)*, 2018. [Tech Demo]
5. Y. Yuan\*, **Z. Wang**, W. Lee, P. VanGilder, Y. Chen, E. Reiman, and K. Chen, “Feasibility of Quantifying Amyloid Burden Using Volumetric MRI Data: Preliminary Findings Based on the Deep Learning 3D Convolutional Neural Network Approach”, *Alzheimer’s Association International Conference (AAIC)*, 2018
6. Y. Yuan\*, **Z. Wang**, W. Lee, P. VanGilder, Y. Chen, E. Reiman, and K. Chen, “Quantification of Amyloid Burden from Florbetapir PET Images without Using Target and Reference Regions: Preliminary Findings Based on the Deep Learning 3D Convolutional Neural Network Approach”, *Alzheimer’s Association International Conference (AAIC)*, 2018
7. A. Samareh, Y. Jin, **Z. Wang**, X. Chang and S. Huang, “Predicting Depression Severity by Multi-Modal Feature Engineering and Fusion”, *In Proceedings of the 32-th AAAI Conference on Artificial Intelligence (AAAI)*, 2018.
8. B. Cheng\*, D. Liu, **Z. Wang**, H. Zhang, and T. Huang, “Visual Recognition in Very Low-Quality Settings: Delving into the Power of Pre-Training”, *In Proceedings of the 32-th AAAI Conference on Artificial Intelligence (AAAI)*, 2018.
9. R. Timofte, ... , **Z. Wang**, ... , et. al. “NTIRE 2017 Challenge on Single Image Super-Resolution: Methods and Results”, *IEEE CVPR New Trends in Image Restoration and Enhancement workshop and challenge on image super-resolution (CVPR NTIRE)*, 2017. [Challenge Report]

10. Y. Fan, H. Shi, J. Yu, D. Liu, W. Han, H. Yu, **Z. Wang**, X. Wang, and T. Huang, “Balanced Two-Stage Residual Networks for Image Super-Resolution”, *IEEE CVPR New Trends in Image Restoration and Enhancement workshop and challenge on image super-resolution (CVPR NTIRE)*, 2017.
11. H. Yu, D. Liu, H. Shi, H. Yu, **Z. Wang**, X. Wang, B. Cross, M. Bramlet, and T. Huang, “Computed Tomography Super-Resolution Using Convolutional Neural Networks”, *In Proceedings of IEEE International Conference on Image Processing (ICIP)*, 2017.
12. S. Huang, J. Zhou, **Z. Wang**, Q. Ling and Y. Shen, “Biomedical Informatics with Optimization and Machine Learning”, *EURASIP Journal on Bioinformatics and Systems Biology (JBSB)*, 2017. [Editorial Paper]
13. **Z. Wang**, D. Liu, S. Chang, F. Dolcos, D. Beck, and T. Huang, “Image Aesthetics Assessment using Deep Chatterjee’s Machine”, *In Proceedings of International Joint Conference on Neural Networks (IJCNN)*, 2017.
14. J. Yu, Y. Jiang, **Z. Wang**, Z. Cao and T. Huang, “UnitBox: An Advanced Object Detection Network”, *In Proceedings of ACM International Conference on Multimedia (ACM MM)*, 2016.
15. Y. Yang, **Z. Wang**, Z. Wang, S. Chang, D. Liu, H. Shi, and T. Huang, “Epitomic Image Super-Resolution”, *In Proceedings of the 30-th AAAI Conference on Artificial Intelligence (AAAI)*, 2016. [Best Presentation Award Finalist]
16. **Z. Wang**, J. Yang, H. Jin, et. al., “DeepFont: A System for Font Recognition and Similarity”, *In ACM International Conference on Multimedia (ACM MM)*, 2015. [Tech Demo]
17. **Z. Wang**, Y. Yang, J. Yang and T. Huang, “Designing A Composite Dictionary Adaptively From Joint Examples”, *In Proceedings of IEEE Conference on Visual Communications and Image Processing (VCIP)*, 2015.
18. **Z. Wang**, Y. Yang, Z. Wang, S. Chang, W. Han, J. Yang, and T. Huang, “Self-Tuned Deep Super Resolution”, *IEEE CVPR workshop on Deep Learning in Computer Vision (CVPR DeepVision)*, 2015.
19. **Z. Wang**, J. Yang, H. Jin, E. Shechtman, A. Agarwala, J. Brandt, and T. Huang, “Real-World Font Recognition using Deep Network and Domain Adaptation”, *International Conference on Learning Representations (ICLR)*, workshop, 2015.
20. **Z. Wang**, X. Liu, S. Chang, J. Zhou, G. Qi, and T. Huang, “Decentralized Recommender Systems”, *SDM workshop on Machine Learning for Recommender Systems (SDM MLRec)*, 2015.
21. **Z. Wang**, Z. Wang, S. Chang, J. Yang and T. Huang, “A Joint Perspective Towards Image Super-Resolution: Unifying External and Self Examples”, *In Proceedings of IEEE Winter conference on Applications of Computer Vision (WACV)*, 2014.
22. Y. Yang, F. Liang, S. Yan. **Z. Wang**, and T. Huang, “Nonparametric Pairwise Similarity for Clustering”, *In Proceedings of Advances in Neural Information Processing Systems (NIPS)*, 2014.
23. Y. Yang, X. Chu, **Z. Wang**, and T. Huang, “On A Theory of Non-parametric Pairwise Similarity for Clustering: Connecting Clustering to Classification”, *NIPS workshop on Modern Nonparametric Methods in Machine Learning*, 2014.

24. Z. Wang, **Z. Wang**, P. Huang, M. Moll, D. Grady, N. Nasrabadi, T. Huang, L. Kayraki, and M. Johnson, “Active Planning, Sensing and Recognition Using a Resource-Constrained Discriminant POMDP”, *IEEE CVPR workshop on Multi-Sensor Fusion (CVPR MSF)*, 2014.
25. Y. Yang, **Z. Wang**, J. Yang, and T. Huang, “Data Clustering by Laplacian Regularized  $\ell_1$ -Graph”, *In Proceedings of the 28-th AAAI Conference on Artificial Intelligence (AAAI)*, 2014.
26. Z. Yu, **Z. Wang**, H. Li, Q. Ling and W. Li, “Video Error Concealment via Total Variation Regularized Matrix Completion”, *In Proceedings of IEEE International Conference on Image Processing (ICIP)*, pp.1633-1636, 2012.
27. Z. Yu, **Z. Wang**, Z. Hu, Q. Ling and H. Li, “Video Frame Interpolation Using 3-D Total Variation Regularized Completion”, *In Proceedings of IEEE International Conference on Image Processing (ICIP)*, pp.857-860, 2012.
28. **Z. Wang**, H. Li, Q. Ling and W. Li, “Mixed Gaussian-Impulse Video Noise Removal via Temporal-Spatial Decomposition”, *In Proceedings of IEEE International Symposium on Circuits and Systems (ISCAS)*, pp.1851-1854, 2012.

SELECTED  
PATENTS

1. “Font Recognition and Font Similarity Learning Using Deep Neural Network”, *US Patent Number: 9501724* (Granted, 11/2016).
2. “A Method for Converting Interleaved Format Video into Progressive Format Video”, *Chinese Patent Number: CN102665060 B* (Granted, 07/2013).
3. “A Denoising Method and Device of Video Sequences”, *Chinese Patent Number: CN102685370 B* (Granted, 04/2013)

SELECTED  
PRESENTATIONS

Invited Talks at University Labs

- Artificial Intelligence in Medicine Seminar Series, Department of Radiation Oncology, University of Texas Southwestern Medical Center Oct 2018
- CS Department, Stevens Institute of Technology Sep 2018
- ECE Department Seminar, TAMU Aug 2018, Oct 2017, Sep 2017
- Instituto de Matematica e Estatistica, University of Sao Paulo Jun 2018
- Information Engineering & Computer Science, University of Trento Jun 2018
- ECE Department Seminar, Rice University May 2018, Dec 2017
- Machine Learning Seminar Series, Michigan State University Apr 2018
- TAMU HRPC Computational and Data Science Seminar Mar 2018
- Computer Vision Webinar, UT San Antonio Mar 2018, Dec 2015
- ECE Department, University of Maryland, College Park Mar 2018
- ECE Department Seminar, University of Houston Nov 2017
- CSE Department Seminar, TAMU Sep 2017
- ECE Department, UMN Jul 2016
- BIMCR, Peking University Jun 2016
- EEIS & Automation Departments, USTC Jun 2016, Nov 2015
- EECS Department, Northwestern University May 2016
- ISE Department, University of Washington Apr 2016
- ECE Department, UIUC May 2015, Dec 2014, May 2013
- Math Department, UCLA Feb 2014
- CS Department, UIUC Apr 2013



Invited Talks at Government Labs, Companies and Research Institutions

- Walmart Tech, Dallas, TX Apr 2018
- US Army Research Lab, Adelphi, MD Mar 2018, Jan 2013
- Samsung Research America, Dallas, TX Feb 2018
- Bell Labs, Murray Hill, NJ Jan 2018
- CCC Symposium, Washington D.C. Oct 2017
- Banner Alzheimer's Institute, Phoenix, AZ Jul 2017
- Hulu, Beijing, China May 2016
- Microsoft Research Asia, Beijing, China Nov 2015
- Baidu Institute of Deep Learning, Beijing, China Nov 2015
- Adobe Research, San Jose, CA Aug 2014, Jan 2013

Oral Presentations at Conferences and Workshops

- ICML & IJCAI, Stockholm, Sweden Jul 2018
- SIAM Imaging Science Conference, Bologna, Italy Jun 2018
- AAAI, New Orleans, LA Feb 2018
- Supercomputing Conference, Denver, CO Nov 2017
- IEEE CVPR, Honolulu, HI Jul 2017
- IJCAI, New York, NY Jul 2016
- SPARE workshop (Invited Talk), USTC, Hefei Jun 2016
- Chinese R Conference (Invited Talk), Beijing, China May 2016
- SDM, Miami, FL May 2016
- AAAI, Phoenix, AZ Feb 2016
- ACM MM, Brisbane, Australia Oct 2015
- VALSE webinar Jun 2015
- IEEE CVPR DeepVision, Boston, MA Jun 2015
- IEEE WACV, Steamboat, CO. Mar 2014

STUDENTS &  
MENTEES

Ph.D. students

- *Zhenyu Wu*, CSE@TAMU Aug 2017 - present
- *Jianghao Shen*, CSE@TAMU Aug 2017 - present
- *Xiaohan Chen*, CSE@TAMU Aug 2017 - present
- *Sicheng Wang*, CSE@TAMU Aug 2017 - present
- *Ye Yuan*, CSE@TAMU Aug 2017 - present
- *Junru Wu*, CSE@TAMU Jan 2018 - present
- *Xinyu Gong*, CSE@TAMU Aug 2018 - present
- *Haotao Wang*, CSE@TAMU Spring 2019 - present
- *Ziyu Jiang*, CSE@TAMU Spring 2019 - present

M.S. students

- *Nitin Bansal*, CSE@TAMU Aug 2017 - present
- *Pengcheng Pi*, ECE@TAMU Aug 2017 - present  
[Co-advising with Prof. Zixiang Xiong]
- *Karthik Suresh*, ECE@TAMU Jan 2018 - present
- *Sheelabhadra Dey*, CSE@TAMU Jan 2018 - present
- *Nalin Dadhich*, CSE@TAMU Jan 2018 - present
- *Ting-Kui Hu*, CSE@TAMU Aug 2018 - present
- *Anjali Chadha*, CSE@TAMU Aug 2018 - present

Visiting scholars

- *Wuyang Chen*, Research Engineer, Green Valley Pharmaceutical LLC May 2018 - present
- *Liqiang Liu*, Ph.D. student (CSC visiting scholar), Chinese Academy of Sciences May 2018 - May 2019

- *Shuai Yang*, Ph.D. student (CSC visiting scholar), CS@Peking University Sep 2018 - Sep 2019
  - *Yue Wang*, M.S. student, CS@Rice University Jul 2018 - Sep 2018
  - *Yifan Jiang*, undergraduate, EE@HUST Jul 2018 - Sep 2018
- External Ph.D. (or equivalent level) mentees
- *Boyi Li*, HUST & MSRA Sep 2016 - Jan 2018  
[Co-advising with Dr. Xiulian Peng and Dr. Ji-Zheng Xu]
  - *Xiaofeng Zhang*, Automation@USTC Sep 2016 - Sep 2018  
[Co-advising with Prof. Qing Ling]
  - *Ke Sun*, EEIS@USTC May 2017 - Mar 2018  
[Co-advising with Prof. Dong Liu]
- Undergraduates
- *Ryan Wells*, CSE@TAMU Aug 2018 - present
  - *Trevor Wieland*, Applied Math@TAMU Aug 2018 - present
  - *Chase Brown*, CSE@TAMU May 2018 - Aug 2018
  - *Bowen Cheng*, ECE@UIUC May 2016 - May 2017
  - *Rusheng Liu*, Math@USTC Feb 2017 - May 2017
  - *Hanchao Deng*, ECE@UIUC Feb 2013 - May 2013
  - *Yiming Jiang*, CS@UIUC Aug 2012 - Dec 2012
- TEACHING
- CSCE 633: Machine Learning Spring 2019
  - CSCE 625: Artificial Intelligence Fall 2018
  - Recent Advances of Deep Learning in Image Processing (Invited short course at University of Sao Paulo, Brazil) Summer 2018
  - CSCE 633: Machine Learning Spring 2018
  - CSCE 689: Machine Learning Methods in Computer Vision Fall 2017
- SERVICES
- Journal Editorship
- *Guest Editor*, IEEE Access, Special Issue on Advanced Optical Imaging for Extreme Environments.
  - *Guest Editor*, IEEE Transactions on Neural Networks and Learning Systems (TNNLS), Special Issue on Discriminative Learning for Model Optimization and Statistical Inference.
  - *Guest Editor*, EURASIP Journal on Advances in Signal Processing (JASP) (previously *EURASIP Journal on Bioinformatics and Systems Biology (JBSB)*), Special Issue on Biomedical Informatics with Optimization and Machine Learning.
  - *Guest Editor*, PLOS ONE.
  - *Associate Editor*, *Asia-Pacific Journal of Neural Networks and Its Applications*.
- Conference Service
- *Area Chair*: ICME 2019, WACV 2019, ICIP 2017
  - *Tutorial Organizer or Speaker*:
    - *SIAM Imaging Science Conference 2018*, Minisymposium: “*Data-Driven Approaches in Imaging Science*”, Bologna, Italy, Jun 2018.
    - *CVPR 2017 Tutorial*: “*Dealing with Reality: Low-Quality Visual Data Processing and Analytics*”, Honolulu, Hawaii, Jun 2017.
    - *ECCV 2016 Tutorial*: “*Deep Learning Meets Model Optimization and Statistical Inference*”, Amsterdam, the Netherlands, Oct 2016.
  - *Session Chair*:
    - *IJCAI 2018*: Feature selection and learning sparse models.
    - *AAAI 2018*: Vision and Learning; Vision.

- *VCIP 2017 special session*: “Regularization Techniques for High-Dimensional Visual Data Processing and Analysis”.
- *Technical Program Committee (or Reviewer)*:
  - AAAI, MIPR 2019
  - CVPR, NIPS, ACM MM, IJCAI, AAAI, MICCAI, ICME, ICDM ACCV, IJCNN, ICIP, MIPR, PAKDD 2018
  - CVPR, ACM MM, IJCAI, MICCAI, ICIP, IROS, SDM, VCIP IJCNN, PAKDD 2017
  - ACM MM, NIPS, ICME, ICIP, AAAI, SDM 2016
  - ACM MM, SDM, IJCAI, ICHI 2015
  - ACM MM, ISCOMI, ISCAS 2014

#### Workshop Service

- *Organization Committee*:
  - IJCAI BOOM workshop (2018, 2017, 2016)
  - IEEE FG FOR-LQ workshop (2018)
  - ChinaMM Dehazing Challenge (2018)
- *Program Committee Co-Chair*: ICCV AMFG 2017
- *Program Committee Member*: ACM MM 2015 MSR-Bing Image Retrieval Challenge
- *Website Chair*: SDM MLRec 2016

#### Journal Reviewer

- IEEE Transactions on Image Processing (TIP)
- IEEE Transactions on Signal Processing (TSP)
- IEEE Transactions on Neural Networks and Learning Systems (TNNLS)
- IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)
- IEEE Transactions on Multimedia (TMM)
- IEEE Transactions on Knowledge and Data Engineering (TKDE)
- IEEE Transactions on Medical Imaging (TMI)
- IEEE Transactions on Cognitive and Developmental Systems (TCDS)
- IEEE Transactions on Cybernetics (TCYB)
- IEEE Transactions on Visualization and Computer Graphics (TVCG)
- IEEE Transactions on Big Data (TBD)
- IEEE Transactions on Intelligent Transportation Systems (TITS)
- IEEE Transactions on Emerging Topics in Computational Intelligence (TETCI)
- IEEE Transactions on Industrial Electronics (TIE)
- IEEE Signal Processing Letters (SPL)
- IEEE Geoscience and Remote Sensing Letters (GRSL)
- IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing
- ACM Transactions on Multimedia Computing, Communications and Applications (TOMM)
- International Journal of Computer Vision (IJCV), Elsevier
- Pattern Recognition (PR), Elsevier
- Neurocomputing, Elsevier
- Signal Processing: Image Communication, Elsevier
- Pattern Recognition Letters (PRL), Elsevier
- Image and Vision Computing (IVC), Elsevier
- Journal of Computer Assisted Radiology and Surgery (IJCARS), Elsevier
- Journal of Biomedical Informatics (JBI), Elsevier
- Computer Methods and Programs in Biomedicine (CMPB), Elsevier
- Machine Learning, Springer

- Multimedia Tools and Applications (MTAP), Springer
- Machine Vision and Applications (MVA), Springer
- EURASIP Journal on Image and Video Processing (JIVP)
- EURASIP Journal on Advances in Signal Processing (JASP)
- EURASIP Journal on Bioinformatics and Systems Biology (JBSB)
- Journal of Applied Remote Sensing (JARS), SPIE
- IET Computer Vision
- IET Image Processing
- MDPI Remote Sensing
- MDPI Sensors
- PLOS ONE

Miscellaneous

- *IEEE Member, AAAI Member*
- *Panelist/Proposal Reviewer: NSF CISE, US Army Research Office*
- *External Ph.D. Thesis Reviewer: University of Technology Sydney*
- *Judge, TAMUhack 2018*
- *Research Mentor: UIUC P.U.R.E research program for undergraduates*
- *Academic Mentor: USTC Abroad Study Advisor-Advisee Program*
- *Online Organization Member: VALSE*
- *Student Volunteer: AAAI 2016*