Ming (Daniel) Shao

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Appointment

- **University of Massachusetts Dartmouth** — Dartmouth, MA
  Tenure-Track Assistant Professor — *2016 Fall - Present*
  - Department of Computer and Information Science, College of Engineering

Education

- **Northeastern University** — Boston, MA
  Ph.D. Computer Engineering — *2012 - 2016*
  - Department of Electrical and Computer Engineering (Full Scholarship, 4 years)
- **State University of New York at Buffalo** — Buffalo, NY
  Ph.D. Candidate Computer Science — *2010 - 2012*
  - Department of Computer Science and Engineering (Presidential Fellowship, 2 years)
- **Beihang University** — Beijing, China
  M.Eng. Computer Science — *2007 - 2010*
  - School of Computer Science and Engineering (Full Scholarship, 2.5 years)
- **Beihang University** — Beijing, China
  B.Eng. Computer Science, B.Sc. Applied Maths — *2002 - 2007*
  - School of Computer Science and Engineering, School of Science

Research Interests

- **Graph Representation Learning:** Graph approximation; graph neural network; efficient graph clustering
- **Robust Representation Learning:** Domain adaptation; few- and zero-shot learning; multi-view/modality learning
- **Adversarial Machine Learning:** Adversary for fairness, social goods, and privacy protection
- **Sparse and Low-Rank (SLR):** SLR based visual understanding, feature engineering, and knowledge transfer
- **Medical and Healthcare informatics:** Medical image analysis; EHR based predictive modeling
- **Social media computing:** Social and familial feature modeling and understanding

Honors and Awards

- UMass Dartmouth Provost Travel Grant Award — 2019
- UMass Dartmouth Graduate Seminar Grant Award — 2017, 2018
- Service-Learning Faculty Fellows at UMass Dartmouth — 2016-2018
- Graduate Student Government ***Travel Award*** — 2016

- Thirtieth AAAI Conference on Artificial Intelligence ***Student Travel Award*** 2015
- ***Best Paper Award Candidate*** of IEEE International Conference on Multimedia and Expo (4/718) 2014
- ***Best Paper Award Candidate*** of IEEE Multimedia Communications Technical Committee 2013
- ***Best Paper Award*** of IEEE ICDM Large Scale Visual Analytics Workshop 2011
- AI Area Scholarship Rank-1, CSE Department, State University of New York at Buffalo 2011
- ***Presidential Fellowship***, State University of New York at Buffalo 2010–2012
- Beihang Excellent Graduate (20 in School of Computer Science and Engineering) 2010
- University Excellent Graduate Thesis (50 in Beihang University) 2010
- Exploration Research Award (2 in School of Computer Science and Engineering) 2009
- GUANGHUA Scholarship (20 in School of Computer Science and Engineering) 2008
- Champion of Post Graduate Basketball Game of CSE in Beihang University 2008
- Third Prize for Beihang Excellent Student Cadres 2005
- Third Class Scholarship of Excellent Social Practice of Beihang University 2005
- Axaltos 2005 SIMagine Contest, Global Top 50 (First Author) 2005
- Second Prize for "Feng Ru" Science and Technology Contest of Beihang University 2005
- Third Prize for English Speech Contest of Beihang University 2002

Research Experience

- **Northeastern University/State University of New York at Buffalo** Boston/Buffalo
  Research Assistant, Supervisor: Prof. Y. Raymond Fu *2010-2016*
  - Large-scale graph representation learning; deep feature learning; low-rank and sparse modeling; subspace learning; social media analytics
- **Beihang University** Beijing, China
  Research Assistant, Supervisor: Prof. Yunhong Wang *2007-2010*
  - Heterogeneous facial images analysis; face image super-resolution; face re-lighting
- **Beihang University** Beijing, China
  Research Assistant, Supervisor: Prof. Depei Qian, Dr. Yongjian Wang *2006*
  - Development of Management Model for Service Support Platform using Java and Design Pattern

Work Experience

- **Philips Research North America** Cambridge, MA
  Research Scientist *05/2016-08/2016*
  - Patient Similarity and Record Retrieval.
- **MITSUBISHI Electric Research Laboratories** Cambridge, MA
  Research Assistant, Mentor: Tim K. Marks, and Mike Jones *05/2014-08/2014*
  - Action detection and recognition in the long-term videos.
- **Motorola Solutions** Schaumburg, IL
  Research Assistant, Mentor: Dr. Yan Zhang, and Kevin O'Connell *05/2013–08/2013*
  - Designed and implemented multi-modal biometrics based authentication system.
- **Samsung Advanced Institute of Technology** Beijing, China
  Research Assistant, Mentor: Dr. Tao Wan *05/2010–07/2010*
  - Benchmark tests of breast tumors classification based on texture or profile feature.
- **Canon Information Technology (Beijing) Co., Ltd.** Beijing, China
  Research Assistant, Mentor: Division Manager of DD1 Xinwu Chen *09/2009–10/2009*

– Research on vessel segmentation, optic disc detection, medical image registration, images stitching, lesions detection methods, and fundus databases, e.g., STARE.

Publications

Summary:

- ***80+*** peer-reviewed research papers, including one ***Best Paper Award*** in IEEE ICDM LSVA Workshop 2011, and one ***Best Paper Award Candidate*** in IEEE International Conference on Multimedia and Expo 2014.
- Full research papers published in various prestigious conferences, including ***CVPR, ICCV, ECCV, IJCAI, AAAI, SIG-KDD, ICDM, SDM,*** etc., and prestigious journals including ***4 IEEE TPAMI (2018 impact factor 17.730), 1 IJCV (2018 impact factor 6.071), 4 IEEE TNNLS (2018 impact factor 11.683), 3 IEEE TIP (2018 impact factor 6.79), 2 IEEE TKDE (2018 impact factor 3.857)***, etc.
- ***2,000+ citations; h-index: 22; i10-index: 42***

Pre-Print

[P-1] Pengyu Gao, Siyu Xia, Joseph Robinson, Junkang Zhang, Chao Xia, **Ming Shao**, and Yun Fu, What Will Your Child Look Like? DNA-Net: Age and Gender Aware Kin Face Synthesizer, *arXiv:1911.07014*, 2019

[P-2] Bin Sun, Jun Li, **Ming Shao**, and Yun Fu, LPRNet: Lightweight Deep Network by Low-rank Pointwise Residual Convolution, *arXiv:1910.11853*, 2019

[P-3] Bin Sun, **Ming Shao**, Siyu Xia, and Yun Fu, Real-time Memory Efficient Large-pose Face Alignment via Deep Evolutionary Network, *arXiv:1910.11818*, 2019.

[P-4] Changsheng Lu, Siyu Xia, **Ming Shao**, and Yun Fu, Arc-support Line Segments Revisited: An Efficient and High-quality Ellipse Detection, *arXiv:1810.03243*, 2019.

[P-5] Zhengming Ding, and **Ming Shao**, Robust Knowledge Discovery via Low-rank Modeling, *arXiv:1909.13123v1*, 2019.

[P-6] Donghui Yan, Zhiwei Qin, Songxiang Gu, Haiping Xu, and **Ming Shao**, Cost-sensitive Selection of Variables by Ensemble of Model Sequences, *arXiv:1901.00456v1*, 2019.

Book Chapters

[B-1] Shuhui Jiang, **Ming Shao**, Caiming Xiong, and Yun Fu, Style Recognition and Kinship Understanding, *Deep Learning through Sparse and Low-Rank Modeling*, pages 221–258, Elsevier, 2019.

[B-2] **Ming Shao**, Dmitry Kit, and Yun Fu, Low-Rank Transfer Learning, *Low-Rank and Sparse Modeling for Visual Analysis*, pages 87–115, Springer, 2014.

[B-3] **Ming Shao**, Mingbo Ma, and Yun Fu, Sparse Manifold Subspace Learning, *Low-Rank and Sparse Modeling for Visual Analysis*, pages 117–132, Springer, 2014.

[B-4] Sheng Li, **Ming Shao**, and Yun Fu, Low-Rank Outlier Detection, *Low-Rank and Sparse Modeling for Visual Analysis*, pages 181–202, Springer, 2014.

[B-5] **Ming Shao**, and Yun Fu, Recognizing Occupations Through Probabilistic Models: A Social View, *Human-Centered Social Media Analytics*, pages 191–206, Springer, 2013.

[B-6] **Ming Shao**, Siyu Xia, and Yun Fu, Identity and Kinship Relations in Group Pictures, *Human-Centered Social Media Analytics*, pages 175–190, Springer, 2013.

Journal Papers

[J-1] Changsheng, Siyu Xia, **Ming Shao**, and Yun Fu, High-quality Ellipse Detection Based on Arc-support Line Segments, *IEEE Transactions on Image Processing* (TIP), 2019.

[J-2] Zhengming Ding, **Ming Shao**, Wonjun Hwang, Sungjoo Suh, Jae-Joon Han, Changkyu Choi, Yun Fu, Robust Discriminative Metric Learning for Image Representation, *IEEE Transactions on Circuits and Systems for Video Technology* (TCSVT), vol. 29, no. 11, pages 3173 – 3183, 2019.

[J-3] Hongfu Liu, **Ming Shao**, and Yun Fu, Feature Selection with Unsupervised Consensus Guidance, *IEEE Transactions on Knowledge and Data Engineering* (TKDE), vol. 31, no. 12, pages 2319 – 2331, 2019.

[J-4] Zhengming Ding, **Ming Shao**, and Yun Fu, Generative Zero-Shot Learning via Low-Rank Embedded Semantic Dictionary, *IEEE Transactions on Pattern Analysis and Machine Intelligence* (TPAMI), vol. 41, no. 12, pages 2861 – 2874, 2019.

[J-5] Hongfu Liu, **Ming Shao**, Zhengming Ding, and Yun Fu, Structure-Preserved Unsupervised Domain Adaptation, *IEEE Transactions on Knowledge and Data Engineering* (TKDE), vol. 31, no. 4, pages 799 – 812, 2018 (in press)

[J-6] Joseph P. Robinson, **Ming Shao**, Yue Wu, Hongfu Liu, Timothy Gillis, and Yun Fu,, Visual Kinship Recognition of Families in the Wild, *IEEE Transactions on Pattern Analysis and Machine Intelligence* (TPAMI), vol. 40, no. 11, pages 2624–2637, 2018.

[J-7] Sheng Li, **Ming Shao**, and Yun Fu, Multi-View Low-Rank Analysis with Applications to Outlier Detection, *ACM Transactions on Knowledge Discovery from Data* (TKDD), vol. 12, no. 3, pages 1–22, 2018.

[J-8] Chengcheng Jia, **Ming Shao**, Sheng Li, Handong Zhao, and Yun Fu, Stacked Denoising Tensor Auto-Encoder for Action Recognition with Spatiotemporal Corruptions, *IEEE Transactions on Image Processing* (TIP), vol. 27, no. 4, pages 1878–1887, 2018.

[J-9] Sheng Li, **Ming Shao**, and Yun Fu, Person Re-identification by Cross-View Multi-Level Dictionary Learning, *IEEE Transactions on Pattern Analysis and Machine Intelligence* (TPAMI), vol. 40, no. 12, pages 2963-2977, 2018.

[J-10] Shuhui Jiang, **Ming Shao**, Chengcheng Jia, and Yun Fu, Learning Consensus Representation for Weak Style Classification, *IEEE Transactions on Pattern Analysis and Machine Intelligence* (TPAMI), vol. 40, no. 12, pages 2906-2919, 2018.

[J-11] Hongfu Liu, **Ming Shao**, Sheng Li, and Yun Fu, Infinite ensemble clustering, *Data Mining and Knowledge Discovery* (DMKD), vol. 32, no. 2, pages 385–416, 2018.

[J-12] Yu Kong, **Ming Shao**, Kang Li, and Yun Fu, Probabilistic Low-Rank Multi-Task Learning, *IEEE Transactions on Neural Networks and Learning Systems* (TNNLS), vol. 29, no. 3, pages 670–680, 2018.

[J-13] **Ming Shao**, Yizhe Zhang, and Yun Fu, Collaborative Random Faces Guided Encoders for Pose-Invariant Face Recognition, *IEEE Transactions on Neural Networks and Learning Systems* (TNNLS), vol. 29, no. 4, pages 1019–1032, 2018.

[J-14] Zhengming Ding, **Ming Shao**, and Yun Fu, Incomplete Multi-Source Transfer Learning, *IEEE Transactions on Neural Networks and Learning Systems* (TNNLS), vol. 29, no. 2, pages 310–323, 2018.

[J-15] Chengcheng Jia, **Ming Shao**, and Yun Fu, Sparse Canonical Temporal Alignment with Deep Tensor Decomposition for Action Recognition, *IEEE Transactions on Image Processing* (TIP), vol. 26, no. 2, pages 738–750, 2017.

[J-16] **Ming Shao**, Xindong Wu, and Yun Fu, Scalable Nearest Neighbor Sparse Graph Approximation by Exploiting Graph Structure, *IEEE Transactions on Big Data* (TBD), vol. 2, no. 4, pages 365–380, 2016.

[J-17] **Ming Shao**, and Yun Fu, Cross-Modality Feature Learning through Generic Hierarchical Hyperlingual-Words, *IEEE Transactions on Neural Networks and Learning Systems* (TNNLS), vol 28, no. 2, pages 451–463, 2017.

[J-18] Zhengming Ding, **Ming Shao**, and Yun Fu, Missing Modality Transfer Learning via Latent Low-Rank Constraint, *IEEE Transactions on Image Processing* (TIP), vol. 24, no. 11, pages 4322–4334, 2015.

[J-19] **Ming Shao**, Dmitry Kit, and Yun Fu, Generalized Low-Rank Transfer Subspace Learning, *International Journal on Computer Vision* (IJCV), vol. 109, no. 1-2, pages 74–93, 2014.

[J-20] Siyu Xia*, **Ming Shao***, Jiebo Luo, and Yun Fu, Understanding Kin Relationships in a Photo, *IEEE Transactions on Multimedia* (TMM), vol. 14, no. 4, pages 1046–1056, 2012. (* indicates equal contribution)

Conference Papers(† indicates supervsied PhD students)

[C-1] Chetan Kumar†, Riazat Ryan†, and Ming Shao, Adversary for Social Good: Protecting Familial Privacy through Joint Adversarial Attacks, *AAAI Conference on Artificial Intelligence* (AAAI), 2020 (acceptance rate: 20.6, %oral presentation).

[C-2] Riazat Ryan†, Handong Zhao, and **Ming Shao**, CTC-Attention based Non-Parametric Inference Modeling for Clinical State Progression, *IEEE International Conference on Big Data* (BigData), 2019 (regular paper, 106 out of 550 submissions).

[C-3] Zhangxing Bian, Siyu Xia, Chao Xia, and **Ming Shao**, Weakly Supervised Vitiligo Segmentation in Skin Image through Saliency Propagation, *IEEE International Conference on Bioinformatics and Biomedicine* (IEEE BIBM), 2019 (in press).

[C-4] Chengyao Zheng, Siyu Xia, **Ming Shao**, and Yun Fu, Fast Facial Image Analogy with Spatial Guidance, *IEEE Conference on Automatic Face and Gesture Recognition* (FG), 2019.

[C-5] Venkata Suhas Maringanti†, and **Ming Shao**, Divide-and-Conquer Kronecker Product Decomposition for Memory-Efficient Graph Approximation, *IEEE International Conference on Big Data, Workshop on Advances in High Dimensional Big Data*, pages 3766-3773, 2018

[C-6] Chao Xiao, Siyu Xia, **Ming Shao**, and Yun Fu, Album to Family Tree: A Graph based Method for Family Relationship Recognition, *Asian Conference on Computer Vision* (ACCV), vol 11362, 2018.

[C-7] Zhengming Ding, **Ming Shao**, Sheng Li, and Yun Fu, Generic Embedded Semantic Dictionary for Robust Multi-label Classification, *IEEE International Conference on Big Knowledge* (ICBK), pages 282–289, 2018.

[C-8] Zhengming Ding, Sheng Li, **Ming Shao**, and Yun Fu, Graph Adaptive Knowledge Transfer for Unsupervised Domain Adaptation, *European Conference on Computer Vision* (ECCV), pages 37–52, 2018.

[C-9] Bin Sun, **Ming Shao**, Siyu Xia, and Yun Fu, Deep Evolutionary 3D Diffusion Heat Maps for Large-pose Face Alignment, *British Machine Vision Conference* (BMVC), pages 1–12, 2018.

[C-10] Chao Xia, Siyu Xia, Yuan Zhou, Le Zhang and **Ming Shao**, Graph based family relationship recognition from a single image, *Pacific Rim International Conference on Artificial Intelligence* (PRICAI), pages 310–320, 2018.

[C-11] Zhengming Ding, **Ming Shao**, and Yun Fu, Robust Multi-view Representation: A Unified Perspective from Multi-view Learning to Domain Adaption, *International Joint Conference on Artificial Intelligence* (IJCAI), Survey track, pages 5434–5440. 2018.

[C-12] Deepak Kumar†, Chetan Kumar†, and **Ming Shao**, Cross-Database Mammographic Image Analysis through Unsupervised Domain Adaptation, *IEEE International Conference on Big Data, Workshop on 2nd Big Data Transfer Learning*, pages 4035-4042, 2017.

[C-13] Changsheng Lu, Siyu Xia, Wanming Huang, **Ming Shao**, and Yun Fu, Circle Detection by Arc-Support Line Segments, *IEEE International Conference on Image Processing* (ICIP), pages 76–80, 2017.

[C-14] Junkang Zhang, Siyu Xia, **Ming Shao**, and Yun Fu, Family Photo Recognition via Multiple Instance Learning, *ACM International Conference on Multimedia Retrieval* (ICMR), pages 424–428, 2017.

[C-15] Zhengming Ding, **Ming Shao**, and Yun Fu, Low-Rank Embedded Ensemble Semantic Dictionary for Zero-Shot Learning, *IEEE Conference on Computer Vision and Pattern Recognition* (CVPR), pages 2050–2058, 2017.

[C-16] Hongfu Liu, **Ming Shao**, and Yun Fu, Structure-Preserved Multi-Source Domain Adaptation, in *IEEE International Conference on Data Mining* (ICDM), pages 1059–1064, 2016.

[C-17] Zhengming Ding, **Ming Shao**, and Yun Fu, Deep Robust Encoder through Locality Preserving Low-Rank Dictionary, *European Conference on Computer Vision* (ECCV), pages 567–582, 2016.

[C-18] Joseph Robinson, **Ming Shao**, Yue Wu, and Yun Fu, Family in the wild (FIW): Large-Scale Kinship Image Database and Benchmarks, *ACM Multimedia Conference* (ACM-MM), pages 242–246, 2016.

[C-19] Hongfu Liu, **Ming Shao**, Sheng Li, and Yun Fu, Infinite Ensemble for Image Clustering, *ACM SIGKDD Conference on Knowledge Discovery and Data Mining* (SIGKDD), pages 1745–1754, 2016.

[C-20] Bharat Singh, Michael Jones, Tim Marks, Oncel Tuzel, and **Ming Shao**, A Multi-Stream Bi-Directional Recurrent Neural Network for Fine-Grained Action Detection, *IEEE Conference on Computer Vision and Pattern Recognition* (CVPR), pages 1961–1970, 2016.

[C-21] Zhengming Ding, **Ming Shao**, and Yun Fu, Transfer Learning for Image Classification with Incomplete Multiple Sources, *International Joint Conference on Neural Networks* (IJCNN), pages 2188–2195, 2016.

[C-22] Chengcheng Jia, **Ming Shao**, and Yun Fu, Sparse Alignment for Video Analysis in Discriminant Tensor Space, *International Joint Conference on Neural Networks* (IJCNN), pages 2260–2266, 2016.

[C-23] **Ming Shao**, Zhengming Ding, Handong Zhao, and Yun Fu, Spectral Bisection Tree Guided Deep Adaptive Exemplar Autoencoder for Unsupervised Domain Adaptation, *AAAI Conference on Artificial Intelligence* (AAAI), pages 2023–2029, 2016.

[C-24] Shuhui Jiang, **Ming Shao**, Chengcheng Jia, and Yun Fu, Consensus Style Centralizing Auto-encoder for Weak Style Classification, *AAAI Conference on Artificial Intelligence* (AAAI), pages 1223–1229, 2016.

[C-25] Hongfu Liu, **Ming Shao**, and Yun Fu, Consensus Guided Unsupervised Feature Selection, *AAAI Conference on Artificial Intelligence* (AAAI), pages 1874–1880, 2016.

[C-26] Handong Zhao, Zhengming Ding, **Ming Shao**, and Yun Fu, Part-Level Regularized Semi-Nonnegative Coding for Semi-Supervised Learning, *IEEE International Conference on Data Mining* (ICDM), pages 1123–1128, 2015.

[C-27] **Ming Shao**, Sheng Li, Zhengming Ding, and Yun Fu, Deep Linear Coding for Fast Graph Clustering, *International Joint Conferences on Artificial Intelligence* (IJCAI), pages 3798–3804, 2015.

[C-28] Sheng Li, **Ming Shao**, and Yun Fu, Cross-View Projective Dictionary Learning for Person Re-identification, *International Joint Conferences on Artificial Intelligence* (IJCAI), pages 2155–2161, 2015.

[C-29] Zhengming Ding, **Ming Shao**, and Yun Fu, Deep Low-Rank Coding for Transfer Learning, *International Joint Conferences on Artificial Intelligence* (IJCAI), pages 3453–3459, 2015.

[C-30] **Ming Shao**, Zhengming Ding, and Yun Fu, Sparse Low-Rank Fusion based Deep Features for Missing Modality Face Recognition, *IEEE International Conference on Automatic Face and Gesture Recognition* (FG), pages 1–6, 2015.

[C-31] Sheng Li, **Ming Shao**, and Yun Fu, Multi-view Low-Rank Analysis for Outlier Detection, *SIAM International Conference on Data Mining* (SDM), pages 748–756, 2015.

[C-32] Shuyang Wang, **Ming Shao**, and Yun Fu, Attractive or Not? Beauty Prediction with Attractiveness Aware Encoders and Robust Late Fusion, *ACM-Multimedia Conference*, pages 805–808, 2014.

[C-33] Zhengming Ding, **Ming Shao**, and Yun Fu, Latent Low-Rank Transfer Subspace Learning for Missing Modality Recognition, *AAAI Conference on Artificial Intelligence* (AAAI), pages 1192-1198, 2014.

[C-34] **Ming Shao**, Sheng Li, Tongliang Liu, Dacheng Tao, Thomas Huang, and Yun Fu, Learning Relative Features Through Adaptive Pooling for Image Classification, *IEEE International Conference on Multimedia and Expo* (ICME), pages 1–6, 2014. (***Best Paper Award Candidates, 4 out of 718***)

[C-35] Sheng Li, **Ming Shao**, and Yun Fu, Locality Linear Fitting One-class SVM with Low-Rank Constraints for Outlier Detection, *International Joint Conference on Neural Networks* (IJCNN), pages 676–683, 2014.

[C-36] Yizhe Zhang*, **Ming Shao***, Edward Wong, and Yun Fu, Random Faces Guided Sparse Many-to-One Encoder for Pose-Invariant Face Recognition, *International Conference on Computer Vision* (ICCV), pages 2416–2423, 2013. (* indicates equal contribution)

[C-37] **Ming Shao**, Liangyue Li, and Yun Fu, What Do You Do? Occupation Recognition in a Photo via Social Context, *International Conference on Computer Vision* (ICCV), pages 3631–3638, 2013.

[C-38] **Ming Shao**, Liangyue Li, and Yun Fu, Predicting Professions through Probabilistic Model under Social Context, *AAAI Conference on Artificial Intelligence* (AAAI), pages 122–124, 2013.

[C-39] **Ming Shao**, and Yun Fu, Hierarchical Hyperlingual-Words for Multi-Modality Face Classification, *IEEE International Conference on Automatic Face and Gesture Recognition* (FG), pages 1–6, 2013.

[C-40] Mingbo Ma, **Ming Shao**, Xu Zhao, and Yun Fu, Prototype Based Feature Learning for Face Image Set Classification, *IEEE International Conference on Automatic Face and Gesture Recognition* (FG), pages 1–6, 2013.

[C-41] Gaurav Srivastava, **Ming Shao**, and Yun Fu, Low-Rank Embedding for Semisupervised Face Classification, *IEEE International Conference on Automatic Face and Gesture Recognition* (FG), pages 1–6, 2013.

[C-42] **Ming Shao**, Carlos Castillo, Zhenghong Gu, and Yun Fu, Low-Rank Transfer Subspace Learning, *IEEE International Conference on Data Mining* (ICDM), pages 1104–1109, 2012.

[C-43] Zhenghong Gu, **Ming Shao**, Liangyue Li, and Yun Fu, Discriminative Metric: Schatten Norm vs. Vector Norm, *International Conference on Pattern Recognition* (ICPR), pages 1213–1216, 2012.

[C-44] Siyu Xia, **Ming Shao**, and Yun Fu, Toward Kinship Verification Using Visual Attributes, *International Conference on Pattern Recognition* (ICPR), pages 549–552, 2012.

[C-45] Wei Chen, **Ming Shao**, and Yun Fu, Clustering Based Fast Low-Rank Approximation for Large-Scale Graph, *IEEE ICDM 2011 Workshop on Large Scale Visual Analytics*, pages, 787–792, 2011. (**Best Paper Award**)

[C-46] **Ming Shao**, Siyu Xia, and Yun Fu, Genealogical Face Recognition based on UB KinFace Database, *IEEE CVPR Workshop on Biometrics* (CVPR'11 BIOM), pages 65–70, 2011.

[C-47] Siyu Xia*, **Ming Shao***, and Yun Fu, Kinship Verification through Transfer Learning, *International Joint Conferences on Artificial Intelligence* (IJCAI), pages 2539–2544, 2011. (* indicates equal contribution)

[C-48] **Ming Shao**, Yunhong Wang, and Xue Ling, A BEMD Based Normalization Method for Face Recognition under Variable Illuminations, *International Conference on Acoustics, Speech, and Signal Processing* (ICASSP), pages 1114–1117, 2010.

[C-49] **Ming Shao**, Yunhong Wang, and Yiding Wang, A Super-Resolution Based Method to Synthesize Visual Images from Near Infrared, *International Conference on Image Processing* (ICIP), pages 2453–2456, 2009.

[C-50] **Ming Shao**, Yunhong Wang, and Peijiang Liu, Face Relighting Based on Multi-Spectral Quotient Image and Illumination Tensorfaces, *Asian Conference on Computer Vision* (ACCV), page 108–117, 2009.

[C-51] **Ming Shao** and Yunhong Wang, Joint Features for Face Recognition under Variable Illuminations, *International Conference on Image and Graphics* (ICIG), pages 922–927, 2009.

[C-52] **Ming Shao** and Yunhong Wang, Recovering Facial Intrinsic Images from a Single Input, *International Conference on Intelligent Computing* (ICIC), pages 82–91, 2009.

Grants Received

[G-1] Unrestricted Gift Fund from Adobe Research, Amount: $10,000

[G-2] Unrestricted Gift Fund from Primaloft, Amount: $5,000

[G-3] Co-PI, Optimal Design of 3D Printed Polymers using Multiscale Modeling and Machine Learning for Biomedical Implants, UMass Dartmouth Multidisciplinary Seed Funding (MSF), Award: $29,541.00, 01/01/2018–06/30/2018

[G-4] Co-PI, Novel Use of Natural Languages Processing (NLP) to Predict Restraint/Seclusion in Psychiatric Nursing Documentation, UMass Dartmouth Multidisciplinary Seed Funding (MSF), Award: $19,280.00, 01/01/2018–06/30/2018

[G-5] PI, Data Science in Large-Scale Visual Kinship Understanding via Microsoft Azure Cloud, Microsoft Azure Research Award, $20,000, 11/01/2017–10/31/2018.

[G-6] PI, Oculus Rift for Remote Rehabilitation, funded by Leduc Center Small Grant program, $1,000, May 2017.

[G-7] PI, Analyzing Social Media thorough Data Analytics, funded under Data Science Course Development program, $4,000, May 2017.

[G-8] Deep Learning for Automatic Visual Kinship Understanding, funded by NVIDIA GPU Grant Program, One TITAN X Graphics Card, Mar 2017.

[G-9] Deep Learning: Representation and Analytics, funded by State Street Data Science Curriculum Enhancement Grant Seed Funding Program for Data-driven Innovation in Engineering, $5,000, Dec 2016.

Teaching Experience

- Instructor, CIS 280 Software Specification & Design, UMass Dartmouth — 2018,2019 Spring
- Instructor, CIS 361 Model of Computation, UMass Dartmouth — 2019 Spring
- Instructor, CIS 360 Algorithms & Data Structure, UMass Dartmouth — 2018, 2019 Fall
- Instructor, CIS 431 Human-Computer Interaction, UMass Dartmouth — 2016 Fall
- Instructor, CIS 465 Topics on Computer Vision, UMass Dartmouth — 2017 Fall
- Instructor, CIS 530 Advanced Data Mining, UMass Dartmouth — 2019 Fall
- Instructor, CIS 550 Advanced Machine Learning, UMass Dartmouth — 2018 Fall
- Instructor, CIS 602 Special Topics on Data Mining, UMass Dartmouth — 2017 Spring
- Instructor, CIS 599 Graduate Seminar, UMass Dartmouth — 2016-2019
- Future Faculty Seminar: Research-Based Principles for Effective Teaching, Northeastern U — 2016 Spring
- Guest Lecturer, EECE 5698: Introduction to Visualization, Northeastern University — 2013-2015
- Teaching Assistant, CSE 115/116: Introduction to Computer Science, SUNY at Buffalo — 2010-2011
- Guest Lecturer, CSE 678: Face and Gesture Recognition, SUNY at Buffalo — 2011 Spring
- Guest Lecturer, CSE 456/556: Introduction to Visualization, SUNY at Buffalo — 2010 Fall

Mentoring Experience

PhD Students Supervision:

1. Neela Rahimi, PhD in EAS, UMass Dartmouth — Fall 2019 – Present
2. Deepak Kumar, PhD in EAS, UMass Dartmouth — Fall 2018 – Present
3. Chetan Kumar, PhD in EAS, UMass Dartmouth — Fall 2018 – Present
4. Riazat Ryan, PhD in EAS, UMass Dartmouth — Fall 2017 – Present
5. Venkata Suhas Maringanti, PhD in EAS, UMass Dartmouth — Fall 2017 – Present

PhD Dissertation Committee:

1. Yue Wu, *Face Recognition by Deep Learning*, PhD in Computer Engineering, Northeastern University.
2. Saikath Bhattacharya, *Tradespace Analysis incorporating Reliability, Availability, Maintainability, and Affordability for Systems*, PhD in Electrical and Computer Engineering, UMass Dartmouth.
3. Phillip K Igoe, *Intelligent Distributed Sensing Towards Multi-Vehicle Autonomy with Undersea Applications*, PhD in EAS, UMass Dartmouth.

Master's Thesis:

1. Deepak Kumar, *Cross-View Action Recognition via Joint Dictionary and Transfer Learning*, Master in Data Science Program, UMass Dartmouth, August 31, 2018.

Master's Thesis Committee:

1. Syed Salman Ahmed Bukhari, *Cross View Data Analysis Combining Data Mining and Relationship Graph*, Advisor: Dr. Maoyuan Sun, May 22, 2019.
2. Ravi Shankar, *Analyzing Noise in Trajectory Data*, Advisor: Dr. David Koop, May 2, 2019.
3. Justin Lovinger *A Tutorial on Supervised Learning from the Perspective OF Mathematical Optimization*, Advisor: Dr. Iren Valova, May 22, 2018.
4. Akhilesh Bhushan Balaji Prasad Camisetty, *Supporting Streaming Data Exploration and Real-Time Collaboration with Web Application Provenance*, Advisor: Dr. David Koop, August 15, 2017.
5. Jay Patel, *Dataflow Notebooks: Enhancing Computational Notebooks*, Thesis Advisor: Dr. David Koop, June 30, 2017.
6. Hari Pad Bharti, *Personalized Graph Based Hybrid Recommendation System*, Thesis Advisor: Dr. Xiaoqin Zhang, June 16, 2017.

Master's Project:

1. Miraj Mahmood, *Politeness Analysis through Deep Learning: A Comparative Study*, Data Science, UMass Dartmouth, May 2019.
2. Manjusha Gadupudi, *Visual Question and Answering*, Data Science, UMass Dartmouth, May 2019.
3. Viraj M Padhiar, *Multilingual Author Profiling on SMS Messages*, Computer and Information Science Department, UMass Dartmouth, May 2019.
4. Abhishek Manoj Kumar, *Visual Kinship Verification through Facial Images*, Data Science, UMass Dartmouth, February 2019.
5. Manjunath Prasad Holenarasipura Rajiv, *Face Generation using Generative Adversarial Networks*, Computer and Information Science Department, UMass Dartmouth, January 2019.
6. Chetan Kumar, *Skeleton Based Action Recognition using Convolutional Neural Network*, Data Science, UMass Dartmouth, September 2018.
7. Javier Arechalde, *Student Dropout and Retention Prediction through Machine Learning*, Data Science, UMass Dartmouth, September 2018.
8. Akash Bachu, *A Comprehensive Study of Text Ming Features and Classifiers*, Data Science, UMass Dartmouth, September 2018.
9. Kevin DCruz, *A WEB API for an Image Recognition System*, Computer and Information Science Department, UMass Dartmouth, June 2018.
10. Tahir Nawaz, *Manifold Visualization for RGB Human Action Data*, Computer and Information Science Department, UMass Dartmouth, August 2017.
11. Devansh Gupta, *Better Computer Go Player with Neural Network and Long-Term Prediction*, Computer and Information Science Department, UMass Dartmouth, May 2017.
12. Deepak Kumar, *Visual Human Action Recognition through Dense Trajectories*, Data Science, UMass Dartmouth, May 2017.
13. Kushal Doshi, *Object Recognition with Bag of Words Features and Support Vector Machine*, Computer and Information Science Department, UMass Dartmouth, January 2017.
14. Shyam Thakuri, *Online Data Collection System for Visual Kinship Verification*, Computer and Information Science Department, UMass Dartmouth, December 2016.

Academic Talks

- Keynote Speech at 2nd BDTL workshop in conjunction with IEEE BigData, Boston, MA 2017
- Invited Talk at UMass Medical School, Worcester, MA 2017

- Keynote Speech at 1st BDTL workshop in conjunction with 2016 IEEE BigData, Washington DC 2016
- Invited Talk at COE Dean's Advisory Council Meeting, UMass Dartmouth, MA 2016
- "Low-Rank Transfer Learning and Its Applications on Social Media Analytics", NVIDIA Research, CA 2016
- "Low-Rank Transfer Learning and Its Applications on Social Media Analytics", UMass Dartmouth, MA 2016
- "Low-Rank Transfer Learning and Its Applications on Social Media Analytics", Philip Research, MA 2016
- AAAI Conference on Artificial Intelligence (AAAI) 2016
- "Low-Rank Transfer Learning and Its Applications on Social Media Analytics", UMass Lowell, MA 2015
- International Joint Conference on Artificial Intelligence (IJCAI) 2015
- Northeastern University ECE PhD Student Seminar Series (NEPSSS) 2015
- Northeastern University Digital Signal Processing (CDSP) Center Research Workshop 2014
- International Conference on Computer Vision (ICCV) 2013
- AAAI Conference On Artificial Intelligence (AAAI) 2013
- IEEE International Conference on Data Mining (ICDM) 2012
- ALERT ADSA08 Workshop 2012
- The Second Multimedia and Vision Meeting in the Greater New York Area 2012
- IEEE Computer Society and IEEE Biometrics Council Workshop on Biometrics 2011
- IEEE International Conference on Image Processing (ICIP) 2009
- IEEE Asian Conference on Computer Vision (ACCV) 2009

Professional Services

Editorial Board

- Associate Editor of IEEE Computational Intelligence Magazine (IEEE CIM)
- Associate Editor of Journal of Electronic Imaging (SPIE)

Tutorial

- "Visual Recognition of Families In the Wild" at IEEE International Conference on Automatic Face and Gesture Recognition 2019
- "Tutorial on Visual Recognition of Families In the Wild" at IEEE Conference on Computer Vision and Pattern Recognition 2019
- "Recognizing Families In the Wild" at ACM Multimedia Conference 2018
- "Large-Scale Multi-view Learning" at IEEE Big Data Conference 2018
- "Multi-view Visual Data Analytics" at IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2018)

Workshop Co-Chair

- The 4th Recognizing Families In the Wild (RFIW) Data Challenge Workshop in conjunction with IEEE Conference on Automatic Face and Gesture Recognition (FG 2020)
- The 3rd Recognizing Families In the Wild (RFIW) Data Challenge Workshop in conjunction with IEEE Conference on Automatic Face and Gesture Recognition (FG 2019)
- The 9th IEEE International Workshop on Analysis and Modeling of Faces and Gestures (AMFG2019) in conjunction with IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2019)
- The 4th International Workshop on Big Data Transfer Learning (BDTL) in conjunction with 2019 IEEE International Conference on Big Data (BigData 2019)
- The 3rd International Workshop on Big Data Transfer Learning (BDTL) in conjunction with 2018 IEEE International Conference on Big Data (BigData 2018)

- The 8th IEEE International Workshop on Analysis and Modeling of Faces and Gestures (AMFG2018) in conjunction with IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2018)
- Faces in Multimedia Workshop in conjunction with IEEE International Conference on Multimedia and Expo (ICME 2018, 2019)
- The 2nd Recognizing Families In the Wild (RFIW) Data Challenge Workshop in conjunction with IEEE Conference on Automatic Face and Gesture Recognition (FG 2018)
- The 2nd International Workshop on Big Data Transfer Learning (BDTL) in conjunction with 2017 IEEE International Conference on Big Data (BigData 2017)
- The 7th IEEE International Workshop on Analysis and Modeling of Faces and Gestures (AMFG2017) in conjunction with International Conference on Computer Vision (ICCV 2017)
- The 1st Recognizing Families In the Wild (RFIW) Data Challenge Workshop in conjunction with ACM Multimedia Conference (ACM-MM 2017)
- Workshop on Textual Customer Feedback Mining and Transfer Learning in conjunction with 2016 IEEE International Conference on Big Data (BigData 2016)

Senior Program Committee Member

- European Conference on Artificial Intelligence (ECAI), 2020
- The AAAI Conference on Artificial Intelligence (AAAI), 2019, 2020

Program Committee Member

- International Conference on Learning Representations (ICLR), 2020
- International Conference on Machine Learning (ICML), 2020
- The AAAI Conference on Artificial Intelligence (AAAI), 2017, 2018
- International Joint Conference on Artificial Intelligence (IJCAI), 2017–2020
- IEEE International Conference on Data Mining (ICDM), 2018, 2019
- ACM International Conference on Information and Knowledge Management (CIKM), 2019
- IEEE International Conference on Big Data (IEEE BigData), 2019
- IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2020
- IEEE International Conference on Computer Vision (ICCV), 2019
- IEEE International Conference on Multimedia Information Retrieval and Processing (MIPR), 2018, 2019
- Affective Computing and Intelligent Interaction (ACII), 2017, 2019
- IEEE International Conference on Automatic Face and Gesture Recognition (FG), 2017–2019
- IEEE International Conference on Machine Learning and Applications (ICMLA), 2016–2018
- The 6th IEEE Workshop on Analysis and Modeling of Faces and Gestures (AMFG2015) in conjunction with IEEE Conference on Computer Vision and Pattern Recognition (CVPR2015)
- The 6th International Workshop on Video Event Categorization, Tagging and Retrieval towards Big Data, in conjunction with European Conference on Computer Vision (ECCV2014)

Publicity Chair

- The 5th IEEE Workshop on Analysis and Modeling of Faces and Gestures (AMFG2013) in conjunction with CVPR2013

Conference (External) Reviewer

- Annual ACM International Conference on Multimedia Retrieval (ICMR) 2016
- Asian Conference on Pattern Recognition (ACPR) 2015
- IEEE Conference on Big Data 2015
- International Conference on Data Mining (ICDM) 2014
- Asian Conference on Computer Vision (ACCV) 2014

- International Conference on Computer Vision (ICCV) 2013
- IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2013-2015
- European Conference on Computer Vision (ECCV) 2014
- ACM Multimedia (ACM-MM) 2012-2014
- SIAM International Conference on Data Mining (SDM) 2013
- International Conference on Automatic Face and Gesture Recognition (FGR) 2013
- British Machine Vision Conference (BMVC) 2012, 2013
- Workshop on the Applications of Computer Vision (WACV) 2012
- IEEE Workshop on Analysis and Modeling of Faces and Gestures (AMFG) 2015
- IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2011-2013
- IEEE International Conference on Multimedia and Expo (ICME) 2011
- International Conference on Pattern Recognition (ICPR) 2010
- IEEE International Conference on Advanced Video and Signal-Based Surveillance (AVSS) 2012, 2013

Journal Reviewer

- PLOS ONE
- International Journal of Computer Vision (IJCV)
- ACM Transactions on Intelligent Systems and Technology (TIST)
- ACM Transactions on Knowledge Discovery from Data (TKDD)
- ACM Transactions on Multimedia Computing, Communications, and Applications (TOMM)
- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
- IEEE Transactions on Neural Network and Learning Systems (TNNLS)
- IEEE Transactions on Image Processing (TIP)
- IEEE Transactions on Knowledge Discovery and Engineering (TKDE)
- IEEE Transactions on Transactions on Circuits and Systems for Video Technology (TCSVT)
- IEEE Transactions on Affective Computing (TAFFC)
- IEEE Transactions on Information Forensics and Security (TIFS)
- IEEE Transactions on Multimedia (TMM)
- IEEE Transactions on Cybernetics
- IEEE Transactions on Biomedical Circuits and Systems (TBioCAS)
- IEEE Transactions on Emerging Topics in Computational Intelligence (TETCI)
- Pattern Recognition (PR)
- Information Science
- Patten Recognition Letter (PRL)
- Neurocomputing
- International Journal of Pattern Recognition and Artificial Intelligence (IJPRAI)
- International Journal of Multimedia Information Retrieval (IJMIR)
- Journal of Multimedia (JMM)
- Journal of Electronic Imaging (JEI)
- Journal of Visual Communication and Image Representation (JVCI)
- Image and Vision Computing (IVC)
- Machine Vision and Applications (MVAP)
- SCIENCE CHINA Information Sciences
- Tsinghua Science and Technology
- Journal of Computer Science and Technology

- The Visual Computer

Professional Associations

- Institute of Electrical and Electronics Engineers (IEEE)
- Association for Computing Machinery (ACM)

Computer&Skills

- **Operation System**: Windows, Linux (Ubuntu), OSX
- **Software:** Microsoft Office Series, Visual Studio, Eclipse, XCode
- **Program Languages**:
  - Proficient: C, C#, Java, Matlab, LaTeX
  - Familiar with: C++, ASP.net, Python, OpenCV, Hadoop, Spark, HTML, CSS