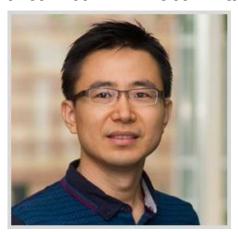# Northeastern University

[Bio] [News] [Press Coverage] [Funding] [Awards] [Research] [Publications] [Teaching] [Service] [SMILE Lab]

Yun Raymond Fu
GoogleCitation **Benefunder**

Dr. and *Associate Professor*
Founding Director of **SmileLab**
Department of ECE, College of Engineering
College of Computer and Information Science (Affiliated)
Northeastern University
403 Dana Research Center
360 Huntington Avenue
Boston, MA 02115
Ph: (617) 373-7328 Fax: (617) 373-8970
E-mail: yunfu AT ece Dot neu Dot edu

Hiring

I am continuously looking for excellent Ph.D. students, PostDocs, Visiting Scholars, and Research Associates to work on machine learning, data mining, computer vision, and social media analytics. Please send me your CV if interested.

Research Interests: Machine Learning, Computational Intelligence, Big Data Mining, Computer Vision, Pattern Recognition, and Cyber-Physical Systems

Education: Ph.D. (ECE, UIUC) M.S. (STAT, UIUC) M.Eng. (PRIS, XJTU) B.Eng. (IE, XJTU)

Academy and Fellow: Global Young Academy (GYA member), Beckman Institute (Beckman Graduate Fellow, 2007-2008).

Young Investigator Award (7): [2016 Grainger Foundation Frontiers of Engineering Award], [2016 IEEE CIS Outstanding Early Career Award], [2016 UIUC ECE Young Alumni Achievement Award], [2015 National Academy of Engineering US Frontiers of Engineering], [2014 ONR Young Investigator], [2014 ARO Young Investigator], [2014 INNS Young Investigator].

Best Paper Awards (7): [SPIE DS 2016], [SIAM SDM 2014], [IEEE ICME 2014], [IEEE FG 2013], [IEEE ICDM LSVA Workshop 2011], [IAPR ICFHR 2010], [IEEE ICIP 2007].

Industry Faculty Award (3): [2016 Samsung GRO Award], [2015 Adobe Faculty Research Award], [2010 Google Faculty Research Award]

Membership (7): IEEE (senior member), ACM (life senior member), AAAI (life member), SPIE (life senior member), OSA (life member), INNS (member), IMS (life member).

Associate Editor: IEEE Transactions on Neural Networks and Leaning Systems (TNNLS) (2013-), IEEE Transactions on Circuits and Systems for Video Technology (TCSVT) (2011-), Image and Vision Computing (IVCJ)(2015-), Neurocomputing (2008-), International Journal of Pattern Recognition and Artificial Intelligence (IJPRAI) (2011-), Journal of Multimedia (JMM) (2009-), Journal of Electronic Imaging (JEI) (2014-).

News

- 11/2016, We have 6 AAAI 2017 papers accepted. All authors are my students from my SMILE Lab! Congratulations!

Northeastern University

Bio

Dr. Fu is an interdisciplinary faculty member affiliated with College of Engineering and the College of Computer and Information Science at Northeastern University. He received the B.Eng. degree in information engineering and the M.Eng. degree in pattern recognition and intelligence systems from Xi'an Jiaotong University, China, respectively, and the M.S. degree in statistics and the Ph.D. degree in electrical and computer engineering from the University of Illinois at Urbana-Champaign, respectively. Prior to joining the Northeastern faculty, he was a Scientist working at BBN Technologies, Cambridge, MA, during 2008-2010. He holds a Part-Time Lecturer position in the Department of Computer Science, Tufts University, Medford, MA, in 2009. He was a tenure-track Assistant Professor of the Department of Computer Science and Engineering, State University of New York, Buffalo, during 2010-2012.

Dr. Fu's research interests are Interdisciplinary research in Machine Learning and Computational Intelligence, Social Media Analytics, Human-Computer Interaction, and Cyber-Physical Systems. He has extensive publications in leading journals, books/book chapters and international conferences/workshops. He serves as associate editor, chairs, PC member and reviewer of many top journals and international conferences/workshops. Dr. Fu is the recipient of 5 best paper awards (SIAM SDM 2014, IEEE FG 2013, IEEE ICDM -LSVA 2011, IAPR ICFHR 2010, IEEE ICIP 2007), 3 young investigator awards (2014 ONR Young Investigator Award, 2014 ARO Young Investigator Award, 2014 INNS Young Investigator Award), 2 service awards (2012 IEEE TCSVT Best Associate Editor, 2011 IEEE ICME Best Reviewer), the 2011 IC Postdoctoral Research Fellowship Award, the 2010 Google Faculty Research Award, the 2008 M. E. Van Valkenburg Graduate Research Award, the 2007-2008 Beckman Graduate Fellowship, 2007 Chinese Government Award for Outstanding Self-Financed Students Abroad, the 2003 Hewlett-Packard Silver Medal and Science Scholarship, Edison Cups of the 2002 GE Fund Edison Cup Technology Innovation Competition, and the 2002 Rockwell Automation Master of Science Award. He is currently an Associate Editor of the IEEE Transactions on Neural Networks and Leaning Systems (TNNLS), and IEEE Transactions on Circuits and Systems for Video Technology (TCSVT). His research is broadly supported by NSF, DOD, DARPA, IARPA, ONR, AFOSR, ARL/ARO, NGA, IC, Samsung and Google. He is a Senior Member of IEEE, Lifetime Member of ACM, AAAI, SPIE, and Institute of Mathematical Statistics, member of INNS and Beckman Graduate Fellow during 2007-2008.

Courses
- **Fall 2015, ECE 7398 Special Topics for Human Centered Computing** [CourseWeb]
- **Fall 2015, EECE 5698 - Introduction to Visualization** [CourseWeb]
- **Spring 2015, EECE 3464 - Linear Systems** [CourseWeb]
- **Fall 2014, EECE 5698 - Introduction to Visualization** [CourseWeb]
- **Spring 2014, CS 5320 - Digital Image Processing** [CourseWeb]
- **Fall 2013, EECE 5698 - Introduction to Visualization** [CourseWeb]
- **Spring 2013, EECE 3464 - Linear Systems** [CourseWeb]
- **Spring 2013, EECE 2411 - Introduction to ECE Lab** [CourseWeb]

Recent Publications [Full-List]

[B-01] **Yun Fu**, Human Activity Recognition and Prediction, **Springer**, 2015

[J-01] Sheng Li, Kang Li and **Yun Fu,** Self-Taught Low-Rank Coding for Visual Learning, *IEEE Transactions on Neural Networks and Learning Systems* (**T-NNLS**), Volume:, Issue:, Page(s):, 2016.

[J-02] Zhengming Ding, Ming Shao and **Yun Fu**, Incomplete Multi-Source Transfer Learning, *IEEE Transactions on Neural Networks and Learning Systems* (**T-NNLS**), Volume:, Issue:, Page(s):, 2016.

[J-03] Chengcheng Jia, Ming Shao and **Yun Fu**, Sparse Canonical Temporal Alignment with Deep Tensor Decomposition for Action Recognition, *IEEE Transactions on Image Processing* (**T-IP**), Volume:, Issue:, Page(s):, 2016.

[J-04] Ming Shao, Xindong Wu, and **Yun Fu**, Scalable Nearest Neighbor Sparse Graph Approximation by Exploiting Graph Structure, IEEE Transactions on Big Data} {**T-BD**), Volume:, Issue:, Page(s):, 2016

[J-05] Dmitry Kit, Yu Kong, and **Yun Fu**, Efficient Image Geotagging Using Large Databases, IEEE Transactions on Big Data} {**T-BD**), Volume:, Issue:, Page(s):, 2016

[J-06] Jun Li, Yu Kong, Handong Zhao, Jian Yang, and **Yun Fu**, Learning Fast Low-rank Projection for Image Classification, *IEEE Transactions on Image Processing* (**T-IP**), Volume:, Issue:, Page(s):, 2016.

[J-07] Chengcheng Jia and **Yun Fu**, Low-Rank Tensor Subspace Learning for RGB-D Action Recognition, *IEEE Transactions on Image Processing* (**T-IP**), Volume:, Issue:, Page(s):, 2016.

[J-08] Yu Kong and **Yun Fu**, Discriminative Relational Representation Learning for RGB-D Action Recognition, *IEEE Transactions on Image Processing* (**T-IP**), Volume:, Issue:, Page(s):, 2016.

[J-09] Shuhui Jiang, Xueming Qian, Tao Mei, and **Yun Fu**, Personalized Travel Sequence Recommendation on Multi-Source Big Social Media, *IEEE Transactions on Big Data* (**T-BD**), Volume:, Issue:, Page(s):, 2016.

[J-10] Yong Du, **Yun Fu**, and Liang Wang, Representation Learning of Temporal Dynamics for Skeleton Based Action Recognition, *IEEE Transactions on Image Processing* (**T-IP**), Volume:, Issue:, Page(s):, 2016.

[J-11] Yu Kong and **Yun Fu**, Max-Margin Action Prediction Machine, *IEEE Transactions on Pattern Analysis and Machine Intelligence* (**T-PAMI**), Volume:, Issue:, Page(s):, 2016.

[J-12] Ming Shao and **Yun Fu**, Cross-Modality Feature Learning through Generic Hierarchical Hyperlingual-Words, *IEEE Transactions on Neural Networks and Learning Systems* (**T-NNLS**), Volume:, Issue:, Page(s):, 2016.

[J-13] Yu Kong and **Yun Fu**, Close Human Interaction Recognition using Patch-aware Models, *IEEE Transactions on Image Processing* (**T-IP**), Volume:, Issue:, Page(s):, 2015.

[J-14] Zhengming Ding, Ming Shao, and **Yun Fu**, Missing Modality Transfer Learning via Latent Low-Rank Constraint, *IEEE Transactions on Image Processing* (**T-IP**), Volume:, Issue:, Page(s):, 2015.

[J-15] Sheng Li and **Yun Fu**, Learning Robust and Discriminative Subspace with Low-Rank Constraints, *IEEE Transactions on Neural Networks and Learning Systems* (**T-NNLS**), Volume:, Issue:, Page(s):, 2015.

[J-16] Sheng Li and **Yun Fu**, Learning Balanced and Unbalanced Graphs via Low-Rank Coding, *IEEE Transactions on Knowledge and Data Engineering* (**T-KDE**), Volume: 27, Issue: 5, Page(s): 1274-1287, 2015.

[J-17] Yu Kong, Behnam Satarboroujeni, and **Yun Fu**, Learning Hierarchical 3D Kernel Descriptors for RGB-D Action Recognition, *Computer Vision and Image Understanding*(**CVIU**), Volume:, Issue:, Page(s):, 2015.

[J-18] Mohammad Soleymani, Sadjad Asghari-Esfeden, **Yun Fu**, and Maja Pantic, Analysis of EEG signals and facial expressions for continuous emotion detection, *IEEE Transactions on Affective Computing* (**T-AF**), Volume:, Issue:, Page(s):, 2015.

[J-19] Shuhui Jiang, Xueming Qian, Jialie Shen, **Yun Fu**, and Tao Mei, Author Topic Model-based Collaborative Filtering for Personalized POI Recommendations, *IEEE Transactions on MultiMedia* (**T-MM**), Volume:17, Issue:6, Page(s): 907-918, 2015.

[C-01] Hongfu Liu, Haiyi Mao, and **Yun Fu**, Robust Multi-View Feature Selection, , IEEE International Conference on Data Mining (**ICDM**), 2016 (regular paper, 8.5%)

[C-02] Hongfu Liu, Ming Shao, and **Yun Fu**, Structure-Preserved Multi-Source Domain Adaptation, , IEEE International Conference on Data Mining (**ICDM**), 2016 (short paper, 11.1%)

[C-03] Zhengming Ding, Ming Shao and **Yun Fu**, Deep Robust Encoder through Locality Preserving Low-Rank Dictionary, The 14th European Conference on Computer Vision (**ECCV**), 2016

[C-04] Hongfu Liu, Yuchao Zhang, Bo Deng, and **Yun Fu**, Outlier Detection via Sampling Ensemble, IEEE International Conference on Big Data (IEEE BigData 2016), 2016

[C-05] Yue Wu, Jun Li, Yu Kong, and **Yun Fu**, Deep Convolutional Neural Network with Independent Softmax for Large Scale Face Recognition, ACM Multimedia (**MM**), 2016

[C-06] Joseph Robinson, Ming Shao, Yue Wu, and **Yun Fu**, Families in the Wild (FIW): Large-Scale Kinship Image Database and Benchmarks, ACM Multimedia (**MM**), 2016

[C-07] Hayi Mao, Yue Wu, Jun Li, and **Yun Fu**, Super Resolution of the Partial Pixelated Images with Deep Convolutional Neural Network, ACM Multimedia (**MM**), 2016

[C-08] Yi Tian, Qiuqi Ruan, Gaoyun An, and **Yun Fu**, Action Recognition using Local Consistent Group Sparse Coding with Spatio-Temporal Structure, ACM Multimedia (**MM**), 2016

[C-09] Shuhui Jiang, Yue Wu, and **Yun Fu**, What Shall I Buy Next: Accessories Recommendation via Deep Bi-directional Cross-triplet Embedding, ACM Multimedia (**MM**), 2016

[C-10] Zhiqiang Tao, Hongfu Liu, Sheng Li and **Yun Fu**, Robust Spectral Ensemble Clustering, The 25th ACM International Conference on Information and Knowledge Management (**CIKM**), 2016

[C-11] Sheng Li, Yaliang Li, and **Yun Fu**, Multi-View Time Series Classification: A Discriminative Bilinear Projection Approach, The 25th ACM International Conference on Information and Knowledge Management (**CIKM**), 2016

[C-12] Hongfu Liu, Ming Shao, Sheng Li, and **Yun Fu**, Infinite Ensemble for Image Clustering, ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD**), 2016

[C-13] Handong Zhao, Hongfu Liu, and **Yun Fu**, Incomplete Multimodal Visual Data Grouping, *International Joint Conference on Artificial Intelligence* (**IJCAI**), 2016

[C-14] Shuyang Wang, Zhengming Ding, and **Yun Fu**, Coupled Marginalized Auto-encoders for Cross- domain Multi-view Learning, *International Joint Conference on Artificial Intelligence* (**IJCAI**), 2016

[C-15] Sheng Li, Nikos Vlassis, Jaya Kawale, and **Yun Fu**, Matching via Dimensionality Reduction for Estimation of Treatment Effects in Digital Marketing Campaigns, *International Joint Conference on Artificial Intelligence* (**IJCAI**), 2016

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[C-18] Shuhui Jiang, Ming Shao, Chengcheng Jia and **Yun Fu**, Consensus Style Centralizing Auto-encoder for Weak Style Classification, The Thirtieth AAAI Conference on Artificial Intelligence (**AAAI**), 2016

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[C-20] Hongfu Liu, Ming Shao and **Yun Fu**, Consensus Guided Unsupervised Feature Selection, The Thirtieth AAAI Conference on Artificial Intelligence (**AAAI**), 2016

[C-21] Handong Zhao, Zhengming Ding and **Yun Fu**, Pose-dependent Low-Rank Embedding for Head Pose Estimation, The Thirtieth AAAI Conference on Artificial Intelligence (**AAAI**), 2016

[C-22] Zhengming Ding, Ming Shao and **Yun Fu**, Transfer Learning for Image Classification with Incomplete Multiple Sources, International Joint Conference on Neural Networks (**IJCNN**), 2016

[C-23] Sheng Li and **Yun Fu**, Unsupervised Transfer Learning via Low-Rank Coding for Image Clustering, International Joint Conference on Neural Networks (**IJCNN**), 2016

[C-24] Chengcheng Jia, Ming Shao and **Yun Fu**, Sparse Canonical Temporal Alignment with NTF for RGB-D Action Recognition, International Joint Conference on Neural Networks (**IJCNN**), 2016

[C-25] Guoqiang Zhong, Yan Zheng, Sheng Li and **Yun Fu**, Scalable Large Margin Online Metric Learning, International Joint Conference on Neural Networks (**IJCNN**), 2016

[C-26] Zhengming Ding, Nasser M Nasrabadi, **Yun Fu**, Task-Driven Deep Transfer Learning for Image Classification, IEEE International Conference on Acoustics, Speech and Signal Processing (**ICASSP**), 2016.

[C-27] Zhengming Ding, Nasser Nasrabadi, and **Yun Fu**, Deep transfer learning for automatic target classification: MWIR to LWIR, Proc. **SPIE** 9844, Automatic Target Recognition XXVI, 984408, 2016.

[C-28] Joseph P. Robinson and **Yun Fu**, Pre-trained D-CNN models for detecting complex events in unconstrained videos, Proc. **SPIE** 9871, Sensing and Analysis Technologies for Biomedical and Cognitive Applications 2016, 987100, 2016.

[C-29] Handong Zhao and **Yun Fu**, Dual-regularized Multi-view Outlier Detection, International Joint Conference on Artificial Intelligence (**IJCAI**), 2015

[C-30] Handong Zhao and **Yun Fu**, Semantic Single Video Segmentation with Robust Graph Representation, International Joint Conference on Artificial Intelligence (**IJCAI**), 2015

[C-31] Zhengming Ding, Ming Shao, and **Yun Fu**, Deep Low-Rank Coding for Transfer Learning, International Joint Conference on Artificial Intelligence (**IJCAI**), 2015

[C-32] Sheng Li, Ming Shao, and **Yun Fu**, Cross-View Projective Dictionary Learning for Person Re-identification, International Joint Conference on Artificial Intelligence (**IJCAI**), 2015

[C-33] Ming Shao, Sheng Li, Zhengming Ding, and **Yun Fu**, Deep Linear Coding for Fast Graph Clustering, International Joint Conference on Artificial Intelligence (**IJCAI**), 2015

[C-34] Yu Kong and **Yun Fu**, Bilinear Heterogeneous Information Machine for RGB-D Action Recognition, IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2015

[C-35] Sheng Li, Kang Li, and **Yun Fu**, Temporal Subspace Clustering for Human Motion Segmentation, International Conference on Computer Vision (**ICCV**), 2015

[C-36] Hongfu Liu, Tongliang Liu, Junjie Wu, Dacheng Tao, **Yun Fu**, Spectral Ensemble Clustering, 21th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD**), 2015

[C-37] Hongfu Liu and **Yun Fu**, Clustering with Partition Level Side Information, IEEE International Conference on Data Mining (**ICDM**), 2015

[C-38] 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**), 2015

[C-39] Sheng Li, Ming Shao, and **Yun Fu**, Multi-view Low-Rank Analysis for Outlier Detection, SIAM International Conference on Data Mining (**SDM**), 2015

[C-40] Hongfu Liu, Junjie Wu, Dacheng Tao, Yuchao Zhang and **Yun Fu**, DIAS: A Disassemble-Assemble Framework for Highly Sparse Text Clustering, SIAM International Conference on Data Mining (**SDM**), 2015

[C-41] Sheng Li, Jaya Kawale and **Yun Fu**, Deep Collaborative Filtering via Marginalized Denoising Auto-encoder, The 24th ACM International Conference on Information and Knowledge Management (**CIKM**), 2015. (Full Paper, Acceptance Rate: 18%)

[C-42] Sheng Li, Jaya Kawale, and **Yun Fu**, Predicting User Behavior in Display Advertising via Dynamic Collective Matrix Factorization, ACM **SIGIR**, 2015

[C-43] Yu Kong, Behnam Sattar, and **Yun Fu**, Hierarchical 3D Kernel Descriptors for Action Recognition Using Depth Sequences, IEEE Conference on Automatic Face and Gesture Recognition (**FG**), 2015

[C-44] Handong Zhao, Zhengming Ding, and **Yun Fu**, Block-wise Constrained Sparse Graph for Face Image Representation, IEEE Conference on Automatic Face and Gesture Recognition (**FG**), 2015

[C-45] Zhengming Ding, Sungjoo Suh, Jae-Joon Han, Changkyu Choi, and **Yun Fu**, Discriminative Low-Rank Metric Learning for Face Recognition, IEEE Conference on Automatic Face and Gesture Recognition (**FG**), 2015

[C-46] Ming Shao, Zhengming Ding, and **Yun Fu**, Sparse Low-Rank Fusion based Deep Features for Missing Modality Face Recognition, IEEE Conference on Automatic Face and Gesture Recognition (**FG**), 2015

[C-47] Yong Du, **Yun Fu**, and Liang Wang, Skeleton Based Action Recognition with Convolutional Neural Network, The 3rd IAPR Asian Conference on Pattern Recognition (**ACPR**), 2015

[C-48] Michael A. Stefanone, Gregory D. Saxton, Michael J. Egnoto, Wayne X. Wei, and **Yun Fu**, Image Attributes and Diffusion via Twitter: The Case of #guncontrol, Proceedings of the 48th Hawaii International Conference on System Sciences (**HICSS**), 1879-1889. January 5-8, Kauai, 2015

Acknowledgements of Support