Allan Z. Ding

CONTACT INFORMATION

799 West Michigan St., ET 301
Indianapolis
IN 46202

Homepage: http://allanding.net/
Email: allanzmding@gmail.com
Cell Phone: +1(617)-390-6211

APPOINTMENT

Tenure-Track Assistant Professor, Department of Computer, Information and Technology
Indiana University-Purdue University Indianapolis, Indianapolis, IN

EDUCATION

Northeastern University, Boston, USA 09/2013–06/2018
Doctor of Philosophy, **Major:** Computer Engineering, **GPA**: 3.9
Supervisor: Yun Raymond Fu
Thesis: Deep Multi-Factor Forensic Face Recognition (NIJ Fellowship)

University of Electronic Science and Technology of China, 09/2010–06/2013
Master of Engineering, **Major:** Computer Software and Theory, **GPA**: 3.2
Supervisor: Yue Wu, Ke Lu
Thesis: Research on Manifold Learning Techniques for Video-based Face Recognition

University of Electronic Science and Technology of China, 09/2006–07/2010
Bachelor of Engineering, **Major:** Information Security, **GPA**: 3.6
Advisor: Ke Lu
Thesis: Research on Novel Data Model for Video-based Face Recognition

RESEARCH INTERESTS

My research interest lies in computer vision and machine learning, with a focus on developing scalable algorithms to learn robust representations from large-scale data. § Deep Learning (Deep Auto-Encoder, Deep CNN, LSTM, Generative Model)
§ Transfer Learning, Multi-view Learning
§ Low-Rank Modeling, Manifold Learning, Subspace Learning, Metric Learning
§ Large-scale Data Analysis, Social Media Analytics

RESEARCH EXPERIENCE

SMILE lab at Northeastern University, 09/2013–06/2018
Position: Research Assistant, **Supervisor**: Prof. Yun Raymond Fu
Topic: **Low-Rank Modeling & Deep Learning for Applied Machine Learning**

Microsoft Research, 06/2017–09/2017
Position: Research Intern, **Supervisor**: Yandong Guo, Lei Zhang
Topic: **Generative Model for Low-Shot Learning**

Adobe Systems Incorporated, 05/2016-07/2016
Position: Data Scientist Intern, **Supervisor**: William Yan
Topic: **Multi-touch Attribution**

Army Research Lab, 06/2015–08/2015
Position: Research Assistant (Summer Intern), **Supervisor**: Nasser M. Nasrabadi
Topic: **Deep Transfer Learning**

TEACHING EXPERIENCE

Instructor: CIT 47900: Database Implementation and Administration, IUPUI, 2018 Fall
Guest Lecture: EECE 5698: Introduction to Visualization, Northeastern University, 2017

CONFERENCE TUTORIAL

[T-1] **Zhengming Ding**, Hongfu Liu and Handong Zhao. *Deep Multi-view Data Analytics*, Thirty-Third AAAI Conference on Artificial Intelligence (AAAI-19), Honolulu, Hawaii, USA

[T-2] **Zhengming Ding**, Ming Shao, Yun Fu. *Large-Scale Multi-view Data Analysis*, IEEE International Conference on Big Data, 2018, Seattle, WA, USA.

[T-3] **Zhengming Ding**, Ming Shao, Yun Fu. *Multi-view Visual Data Analytics*, IEEE International Conference on Computer Vision and Pattern Recognition, 2018, Salt Lake City, Utah.

[T-4] **Zhengming Ding**, Handong Zhao, Yun Fu. *Multi-view Face Representation*, IEEE International Conference on Automatic Face and Gesture Recognition, 2017, in Washington, DC.

PUBLICATIONS

Summary:

- more than 50 peer-reviewed research papers, including one SPIE Lockheed Martin Best Paper Award, 2016 and one Best Paper Candidate in ACM MM 2017.
- Full Research Papers published in various prestigious conferences, including CVPR, ECCV, IJCAI, AAAI, ICDM, ACM MM etc., and prestigious journals including IEEE TPAMI (impact factor 9.455), IEEE TNNLS (impact factor 7.982), IEEE TIP (impact factor 5.071), etc.
- 606 citations; h-index: 15; i10-index: 18 (by Sept. 2018).

Journal Paper:

[J-1] **Zhengming Ding**, and Yun Fu. Deep Transfer Low-Rank Coding for Cross-Domain Learning. IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**), (accepted) 2018.

[J-2] **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**), 2018 (in press) `https://ieeexplore.ieee.org/abstract/document/8451907/`.

[J-3] Shuyang Wang, **Zhengming Ding**, and Yun Fu. Cross-Generation Kinship Verification with Sparse Discriminative Metric, IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), 2018 (in press) `https://ieeexplore.ieee.org/abstract/document/8424076/`.

[J-4] Kai Li, **Zhengming Ding**, Sheng Li, and Yun Fu. owards Resolution-Invariant Person Re-identification via Projective Dictionary Learning. IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**), 2018, (accepted).

[J-5] Zhiqiang Tao, Hongfu Liu, Sheng Li, **Zhengming Ding**, and Yun Fu. Robust Spectral Ensemble Clustering via Rank Minimization. ACM Transactions on Knowledge Discovery from Data (**TKDD**), 2018, (accepted).

[J-6] Lichen Wang, **Zhengming Ding**, and Yun Fu. Low-Rank Transfer Human Motion Segmentation, IEEE Transactions on Image Processing (**TIP**), 2018, (accepted).

[J-7] **Zhengming Ding**, and Yun Fu. Dual Low-Rank Decompositions for Robust Cross-View Learning, IEEE Transactions on Image Processing (**TIP**), 2018 (accepted) `https://ieeexplore.ieee.org/document/8438505/`.

[J-8] **Zhengming Ding**, Nasser Nasrabadi, and Yun Fu. *Semi-supervised Deep Domain Adaptation via Coupled Neural Networks*, IEEE Transactions on Image Processing (**TIP**), vol. 27, no. 11, pp. 5214-5224, 2018.

[J-9] Hongfu Liu, Ming Shao, **Zhengming Ding**, and Yun Fu. *Structure-Preserved Unsupervised Domain Adaptation*, IEEE Transactions on Knowledge and Data Engineering (**TKDE**), 2018 (in press) `https://ieeexplore.ieee.org/document/8370901/`.

[J-10] Shuang Li, Shiji Song, Gao Huang, **Zhengming Ding**, and Cheng Wu. *Domain Invariant and Class Discriminative Feature Learning for Visual Domain Adaptation*, IEEE Transactions on Image Processing (**TIP**), vol. 27, no. 9, pp. 4260-4273, 2018.

[J-11] **Zhengming Ding**, and Yun Fu. *Robust Multi-view Data Analysis through Collective Low-Rank Subspace*. IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**), vol. 29, no. 5, pp. 1986-1997, 2018.

[J-12] **Zhengming Ding**, Ming Shao, and Yun Fu. *Incomplete Multisource Transfer Learning*. IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**), vol. 29, no. 2, pp. 310-323, 2018.

[J-13] **Zhengming Ding**, and Yun Fu. *Deep Domain Generalization with Structured Low-Rank Constraint*, IEEE Transactions on Image Processing (**TIP**), vol. 27, no. 1, pp. 304-313, 2018.

[J-14] Shuyang Wang, **Zhengming Ding**, and Yun Fu. *Marginalized Denoising Dictionary Learning with Locality Constraint*, IEEE Transactions on Image Processing (**TIP**), vol. 27, no. 1, pp. 500-510, 2018.

[J-15] Handong Zhao, Hongfu Liu, **Zhengming Ding** and Yun Fu. *Consensus Regularized Multi-View Outlier Detection*. IEEE Transactions on Image Processing (**TIP**), vol. 27, no. 1, pp. 236-248, 2018.

[J-16] Handong Zhao, **Zhengming Ding**, and Yun Fu. *Ensemble Subspace Segmentation Under Block-wise Constraints*. IEEE Transactions on Circuits and Systems for Video Technology (**TCSVT**), vol. 28, no. 7, pp. 1526-1539, 2018.

[J-17] **Zhengming Ding**, and Yun Fu. *Robust Transfer Metric Learning for Image Classification*. IEEE Transactions on Image Processing (**TIP**), vol. 26, no.2, pp. 660-670, 2017.

[J-18] Yu Kong, **Zhengming Ding**, Jun Li, and Yun Fu. *Deeply Learned View-Invariant Features for Cross-View Action Recognition*. IEEE Transactions on Image Processing (**TIP**), vol. 26, no. 6, pp. 3028-3037, 2017.

[J-19] **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, pp. 4322-4334, 2015

[J-20] Ke Lu, **Zhengming Ding** and Sam Ge. *Sparse Representation Based Graph Embedding for Traffic Sign Recognition*. IEEE Transactions on Intelligent Transportation Systems (**TITS**), vol. 13, no. 4, pp. 1515-1524, 2012.

Conference Paper:

[C-1] **Zhengming Ding**, Sheng Li, Ming Shao and Yun Fu. Graph Adaptive Knowledge Transfer for Unsupervised Domain Adaptation. European Conference on Computer Vision (**ECCV**), pp. 37-52, 2018.

[C-2] **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**), 2018, (accepted).

[C-3] Qianqian Wang, **Zhengming Ding**, Zhiqiang Tao, Quanxue Gao, and Yun Fu. Partial Multi-View Clustering via Consistent GAN. IEEE International Conference on Data Mining (**ICDM**), 2018, (accepted).

[C-4] Kai Li, **Zhengming Ding**, Kunpeng Li, Yulun Zhang, and Yun Fu. Support Neighbor Loss for Person Re-Identification. ACM International Conference on Multimedia (**ACM MM**), 2018, (accepted).

[C-5] **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**), pp. 5434-5440, 2018 (Survey Track).

[C-6] Lichen Wang, **Zhengming Ding**, and Yun Fu. Adaptive Graph Guided Embedding for Multi-label Annotation, International Joint Conference on Artificial Intelligence (**IJCAI**), pp. 2798-2804, 2018.

[C-7] **Zhengming Ding**, Yandong Guo, Lei Zhang, and Yun Fu, *One-Shot Face Recognition via Generative Learning*, IEEE Conference on Automatic Face and Gesture Recognition (**FG**), 2018.

[C-8] Yue Wu, **Zhengming Ding**, Hongfu Liu, Joseph Robinson, and Yun Fu, *Kinship Classification through Latent Adaptive Subspace*, IEEE Conference on Automatic Face and Gesture Recognition (**FG**), 2018.

[C-9] Kai Li, Sheng Li, **Zhengming Ding**, Weidong Zhang, and Yun Fu. *Latent Discriminant Subspace Representations for Multi-view Outlier Detection*, 32nd AAAI Conference on Artificial Intelligence (AAAI), 2018

[C-10] Kai Li, **Zhengming Ding**, Sheng Li, and Yun Fu. *Semi-coupled Projective Dictionary Learning for Low-Resolution Person Re-Identification*, 32nd AAAI Conference on Artificial Intelligence (AAAI), 2018

[C-11] Lichen Wang, **Zhengming Ding**, and Yun Fu. Transferable Subspace for Human Motion Segmentation, 32nd AAAI Conference on Artificial Intelligence (AAAI), 2018

[C-12] **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), 2017.

[C-13] Shuhui Jiang, **Zhengming Ding** and Yun Fu. *Deep Low-rank Sparse Collective Factorization for Cross-Domain Recommendation*. ACM Multimedia (MM), 2017 (Best Paper Candidate)

[C-14] Wencang Zhao, Yu Kong, **Zhengming Ding** and Yun Fu. *Deep Active Learning Through Cognitive Information Parcels*. ACM Multimedia (MM), 2017(poster full research paper)

[C-15] Zhiqiang Tao, Hongfu Liu, Sheng Li, **Zhengming Ding** and Yun Fu. *From Ensemble Clustering to Multi-View Clustering*. International Joint Conference on Artificial Intelligence (IJCAI), 2017.

[C-16] Shuyang Wang, **Zhengming Ding** and Yun Fu. *Feature Selection Guided Auto-Encoder*. 31st AAAI Conference on Artificial Intelligence (AAAI), 2017.

[C-17] Handong Zhao, **Zhengming Ding** and Yun Fu. *Multi-view Clustering via Deep Matrix Factorization*. 31st AAAI Conference on Artificial Intelligence (AAAI), 2017.

[C-18] **Zhengming Ding**, Ming Shao and Yun Fu. *Deep Robust Encoder through Locality Preserving Low-Rank Dictionary*. European Conference on Computer Vision, (ECCV), 2016.

[C-19] 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-20] **Zhengming Ding**, Nasser Nasrabadi and Yun Fu. *Deep Transfer Learning for Automatic Target Classification: MWIR to LWIR*. SPIE Defense+ Security, 2016 (Best Paper Award).

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

[C-22] **Zhengming Ding**, Nasser M Nasrabadi and Yun Fu. *Task-driven Deep Transfer Learning for Image Classification*. 41st IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2016

[C-23] **Zhengming Ding** and Yun Fu. *Robust Multi-view Subspace Learning through Dual Low-rank Decompositions*. Thirtieth AAAI Conference on Artificial Intelligence (AAAI), 2016.

[C-24] Ming Shao, **Zhengming Ding**, Handong Zhao and Yun Fu. *Spectral Bisection Tree Guided Deep Adaptive Exemplar Autoencoder for Unsupervised Domain Adaptation*. Thirtieth AAAI Conference on Artificial Intelligence (AAAI), 2016.

[C-25] Handong Zhao, **Zhengming Ding**, and Yun Fu. *Pose-dependent Low-Rank Embedding for Head Pose Estimation*. Thirtieth AAAI Conference on Artificial Intelligence (AAAI), 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), 2015 .

[C-27] **Zhengming Ding**, Ming Shao, and Yun Fu. *Deep Low-rank Coding for Transfer Learning*. International Joint Conference on Artificial Intelligence (IJCAI), 2015

[C-28] 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-29] **Zhengming Ding**, Sungjoo Suh, Jae-Joon Han, Changkyu Choi, and Yun Fu. *Discriminative Low-Rank Metric Learning for Face Recognition*. International Conference on Automatic Face and Gesture Recognition (FG), 2015.

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

[C-31] Handong Zhao, **Zhengming Ding**, and Yun Fu. *Block-wise Constrained Sparse Graph for Face Image Representation*. International Conference on Automatic Face and Gesture Recognition (FG), 2015.

[C-32] **Zhengming Ding**, Yun Fu. *Low-Rank Common Subspace for Multi-View Learning*. IEEE International Conference on Data Mining (ICDM, **regular paper**), 2014.

[C-33] Chengcheng Jia, Yu Kong, **Zhengming Ding** and Yun Fu. *Latent Tensor Transfer Learning for RGB-D Action Recognition*. The 22nd ACM International Conference on Multimedia (ACM MM, **long paper**), 2014.

[C-34] **Zhengming Ding**, Ming Shao and Yun Fu. *Latent Low-Rank Transfer Subspace Learning for Missing Modality Recognition*. Twenty-Eighth AAAI Conference on Artificial Intelligence (AAAI), 2014.

Patent:

[P-1] Wonjun Hwang, Sungjoo Suh, JaeJoon Han, ChangKyu Choi, Yun Fu, **Zhengming Ding**, Ming Shao. *Method of extracting feature of image to recognize object*. US 20170236000 A1

[P-2] Sungjoo Suh, Yun Fu, **Zhengming Ding**, ChangKyu Choi and Jaejoon Han. *Apparatus and Method for Extracting Feature Of Image Including Object*. United States Patent Application 20160086047.

Doctoral Consortium:

[DC-1] **Zhengming Ding**. Robust Feature Learning for View-Unknown Image Classification. IEEE FG-DC, 2017

[DC-2] **Zhengming Ding**. Robust Feature Learning for Visual Data Analysis. IEEE CVPR-DC, 2017

Proposal Writing

Principal investigator [Pending]

[PW-1] *CRII:RI:Knowledge Transfer for Large-Scale Visual Recognition*
National Science Foundation

[PW-2] *Low-Light Intelligent Human Recognition*
Sony Research Award Program (Faculty Innovation Award)

[PW-3] *Family Recognition with Knowledge Transferable Augmentation*
Amazon Research Awards

Key Contributor for:

[PW-1] *Images Assisted Video Recognition by Heterogeneous Knowledge Transfer*
Army Research Office (ARO), $390k.

[PW-2] *Unconstrained Face Recognition through Low-Rank Learning*
Samsung Faculty Research Grant, $290k, 01/2014-01/2017.

[PW-3] *Deep Multi-Factor Forensic Face Recognition*
National Institute of Justice (NIJ) Fellowship, $150k, 08/2016-04/2018.

Honors

Chinese Government Award for Outstanding Self-Financed Students Abroad, 2017
ACM Multimedia Best Paper Candidate, 2017
Travel Award for National Institute of Justice (NIJ) Forensic Science Research & Development Poster Session at the Pittcon 2018 Conference & Expo, 2017
NEU College of Engineering Outstanding Graduate Research Award, 2017
CVPR Doctoral Consortium Travel Award, 2017
FG Doctoral Consortium Travel Grant, 2017
Graduate Student Government Travel Award, NEU, 2017/2016/2015
National Institute of Justice (NIJ) Fellowship, 2016
SPIE Lockheed Martin Best Paper Award, 2016
IJCAI Student Travel Award, 2016
AAAI Student Travel Award, 2016
NSF Student Travel Award (ICDM-14), 2014
ACM MM Student Travel Award, 2014
National Graduate Scholarship (China), 2012
National Inspirational Scholarship (China), 2007

Academic Talks

IEEE BigData Tutorial "Large-Scale Multi-view Data Analysis", Seattle, WA, USA, Dec. 2018
IEEE CVPR Tutorial "Multi-view Visual Data Analytics", Salt Lake City, USA, June, 2018
IEEE FG Tutorial "One-Shot Face Representation", Xi'An, China, May 2018
Knowledge Transfer for Face Recognition, URI/UIUC/UCF, Oct./Nov. 2017
One-/Zero-Shot Learning for Visual Image Classification, Columbia University, Oct. 2017
Deep Feature Learning for Visual Data Analytics, Samsung Research America, Sept. 2017
IEEE CVPR Conference, Honolulu, Hawaii, July 2017
IEEE FG Tutorial "Multi-View Face Representation", Washington DC, May 2017
AAAI conference, Phoenix, Arizona, February 10-17, 2016
IJCAI conference, Buenos Aires, Argentina, July 25-31, 2015
IEEE FG conference, Ljubljana, Slovenia, May 4-8, 2015
IEEE ICDM conference, Shenzhen, China, December 15-17, 2014

Mentoring Experience

- **Qianqian Qang**, Visiting student, Northeastern University, Co-advised on the Project "Multi-view Learning", 09/2017-current.
- **Kai Li**, PhD student, Northeastern University, Co-advised on the Project "Person Re-identification" and "Multi-view Outlier Detection", 09/2016-current.
- **Lichen Wang**, PhD student, Northeastern University, Co-advised research on "Temporal Subspace Clustering" and "Zero-Shot/Multi-view Learning", 09/2016-current.

- **Yue Wu**, PhD student, Northeastern University, Co-advised on the Project "Family Classification", 09/2016-12/2016.
- **Shuhui Jiang**, PhD student, Northeastern University, Co-advised research on Cross-domain Recommendation, 09/2016-10/2017.
- **Shuyang Wang**, PhD student, Northeastern University, Co-advised research on Auto-Encoder based Feature Selection and Dictionary learning, 03/2015-07/2017.

Professional Services

Program Chair
- 3rd International Workshop on Big Data Transfer Learning (BDTL)

Senior Program Committee (SPC)
- 33rd AAAI Conference on Artificial Intelligence (AAAI-19)

Program Committee Member
- IEEE Conference on Computer Vision and Pattern Recognition 2018 (CVPR 2018)
- The 13th IEEE International Conference on Automatic Face and Gesture Recognition (FG 2018)
- The 1st IEEE International Conference on Multimedia Information Retrieval and Processing (MIPR 2018)
- The 7th IEEE Workshop on Analysis and Modeling of Faces and Gestures in Conjunction with ICCV2017 (AMFG2017)
- International Conference on Affective Computing and Intelligent Interaction (ACII), 2017
- IEEE International Conference on Machine Learning and Applications (ICMLA), 2016/2017
- The 6th IEEE Workshop on Analysis and Modeling of Faces and Gestures in Conjunction CVPR2015 (AMFG2015)

Publicity Chair
- The 2nd International Workshop on Big Data Transfer Learning (BDTL) in Conjunction with IEEE BigData Conference, 2017
- The 7th IEEE Workshop on Analysis and Modeling of Faces and Gestures in Conjunction with ICCV2017 (AMFG2017)

Journal Reviewer
- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI) (review count: 2)
- IEEE Transactions on Knowledge and Data Engineering (TKDE) (review count: 2)
- IEEE Transactions on Image Processing (TIP) (review count: 10)
- IEEE Transactions on Neural Network and Learning Systems (TNNLS) (review count: 28)
- IEEE Transactions on Circuits and Systems for Video Technology (TCSVT) (review count: 2)
- IEEE Transactions on Emerging Topics in Computational Intelligence (TETCI) (review count: 3)
- IEEE Transactions on Multimedia (TMM) (review count: 3)
- Image and Vision Computing (review count: 2)
- Journal of Electronic Imaging (JEI) (review count: 3)
- Journal of Visual Communication and Image Representation (JVCI) (review count: 2)

Conference(External) Reviewer
CVPR2018, AAAI 2016-2017, FG 2015-2018, ECCV 2016, NIPS 2016, CVPR 2015-2017, ICMLA 2016, ACPR 2015, ACM MM 2015, SDM 2015, WACV 2014, BMVC 2014.

Professional Associations
- Institute of Electrical and Electronics Engineers (IEEE)
- Association for the Advancement of Artificial Intelligence (AAAI)