

Hongfu Liu

Michtom School of Computer Science
Volen Center for Complex Systems 136
Brandeis University, 415 South St, Waltham, MA 02453

Tel: +1 (731)-726-2735
E-mail: hongfuliu@brandeis.edu
Homepage: hongfuliu.com

- POSITION** **Brandeis University** Waltham, MA, USA
Assistant Professor in Michtom School of Computer Science 07/2018 - now
- EDUCATION** **Northeastern University** Boston, MA, USA
Ph.D. in Computer Engineering 09/2014 - 04/2018
Advisor: Professor Yun Raymond Fu
- Beihang University** Beijing, China
M.Eng. in Management Science and Engineering 09/2011 - 06/2014
Advisor: Professor Junjie Wu
- Beihang University** Beijing, China
B.Eng. in Information Management and Information System 09/2007 - 06/2011
- Beihang University** Beijing, China
B.S. in Applied Mathematics 09/2007 - 06/2011
- Beihang University** Beijing, China
B.A. in Law 09/2007 - 06/2011
- RESEARCH INTERESTS**
- **Cluster Analysis:** consensus clustering, constrained clustering, balanced clustering, multi-view clustering, interpretable clustering, big data clustering
 - **Outlier Detection:** multi-view outlier detection, spammer detection, zombie user detection, bi-sampling outlier detection, jointly clustering and outlier detection
 - **Transfer Learning:** heterogenous domain adaptation, unsupervised domain adaptation, structure-preserved domain adaptation
 - **Feature Selection:** unsupervised feature selection, multi-view feature selection
- INDUSTRY EXPERIENCE**
- **Microsoft Research Asia** Beijing, China
Data Scientist Intern, *Mentor:* Dr. Lintao Zhang & Dr. Qi Chen 06/2017 - 08/2017
Project: Fast Clustering with Flexible Balance Constraints
 - **Adobe Research** San Jose, CA
Data Scientist Intern, *Mentor:* Dr. Nikos Vlassis 05/2016 - 07/2016
Project: Greedy K-means-based Consensus Clustering for Customer Segmentation
- TEACHING EXPERIENCE**
- LECTURER
 - ◇ *Introduction to Big Data, Undergraduate & Graduate*, Spring 2019
 - ◇ *Introduction to Data Mining, Undergraduate & Graduate*, Fall 2018
 - ◇ *Introduction to E-Commerce, Undergraduate*, Fall 2013
 - ◇ *Operation Research, Junior College Student*, Fall 2011
 - ASSISTANT
 - ◇ *Machine Learning and Pattern Recognition*, Fall 2016
 - ◇ *Foundation of Visualization*, Fall 2015
 - ◇ *Modern Programming Design, Undergraduate*, Fall 2013
 - ◇ *Introduction to Java Programming, Undergraduate*, Fall 2009, 2010, Spring 2013
 - ◇ *Management Information Systems, MBA*, Spring & Fall 2011, Spring 2013
 - ◇ *Linear Algebra, Undergraduate*, Fall 2012
- TUTORIAL**
1. Zhengming Ding, **Hongfu Liu** and Handong Zhao. Deep Multi-view Visual Data Analytics. *AAAI Conference on Artificial Intelligence (AAAI)*, 2019.

PUBLICATIONS • JOURNAL PAPERS

◇ 2 **TPAMI**, 4 **TKDE**, 1 **DMKD**, 2 **TKDD**, 1 **BMC**, 1 **TFS**, 1 **TIP**, 1 **IS**

1. Deqing Wang, Chenwei Lu, Junjie Wu, **Hongfu Liu**, Wenjie Zhang and Fuzhen Zhuang. Softly Associative Transfer Learning for Cross-domain Classification. *IEEE Transactions on Cybernetics (TC)*, 2019.
2. **Hongfu Liu**, Ming Shao and Yun Fu. Feature Selection with Unsupervised Consensus Guidance. *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, 2018.
3. 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.
4. Yue Wu, **Hongfu Liu**, Jun Li and Yun Fu. Improving Face Representation Learning with Center Invariant Loss. *Image and Vision Computing (IVC)*, 2018.
5. **Hongfu Liu**, Ming Shao, Zhengming Ding and Yun Fu. Structure-Preserved Unsupervised Domain Adaptation. *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, 2018.
6. Joseph 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)*, 2018.
7. **Hongfu Liu** and Yun Fu. Consensus Guided Multi-View Clustering. *ACM Transactions on Knowledge Discovery from Data (TKDD)*, 2018.
8. Xue Li and **Hongfu Liu**. Greedy Optimization for K-means-based Consensus Clustering. *Tsinghua Science and Technology (TST)*, 2018.
9. **Hongfu Liu**, Zhiqiang Tao and Yun Fu. Partition Level Constrained Clustering. *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 2017.
10. **Hongfu Liu**, Ming Shao, Sheng Li and Yun Fu. Infinite Ensemble Clustering. *Data Mining and Knowledge Discovery (DMKD)*, 2017.
11. **Hongfu Liu**, Junjie Wu, Tongliang Liu, Dacheng Tao and Yun Fu. Spectral Ensemble Clustering: Theoretical and Practical Evidence. *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, 2017.
12. **Hongfu Liu**, Rui Zhao, Hongsheng Fang, Feixiong Chen, Yun Fu and Yuyang Liu. Entropy-based Consensus Clustering for Patient Stratification. *Bioinformatics (BMC)*, 2017.
13. Handong Zhao, **Hongfu Liu**, Zhengming Ding and Yun Fu. Consensus Regularized Multi-View Outlier Detection. *IEEE Transactions on Image Processing (TIP)*, 2017.
14. Junjie Wu, Ziang Wu, Jie Cao, **Hongfu Liu**, Guoqing Chen and Yanchuan Zhang. Fuzzy Consensus Clustering with Applications on Big Data. *IEEE Transactions on Fuzzy Systems (TFS)*, 2017.
15. Junjie Wu, **Hongfu Liu**, Hui Xiong, Jie Cao and Jian Chen. K-means-based Consensus Clustering: A Unified View. *IEEE Transactions on Knowledge And Data Engineering (TKDE)*, 2015.
16. Junjie Wu, Shiwei Zhu, **Hongfu Liu** and Guoping Xia. Cosine Interesting Pattern Discovery. *Information Sciences (IS)*, 2012.

• CONFERENCE PAPERS

◇ 3 **KDD**, 4 **ICDM**, 1 **SDM**, 4 **IJCAI**, 5 **AAAI**, 1 **CIKM**, 3 **IEEE BigData**, 1 **HPCC**, 1 **ICSSSM Best Paper**

1. Haitao Xiong, **Hongfu Liu**, Bineng Zhong and Yun Fu. Structured and Sparse Annotations for Image Emotion Distribution Learning. *In Proceedings of AAAI Conference on Artificial Intelligence (AAAI)*, 2019.
2. **Hongfu Liu**, Ziming Huang, Yun Fu, Qi Chen, Mingqin Li, and Lintao Zhang. Fast Clustering with Flexible Balance Constraints. *In Proceedings of IEEE International Conference on Big Data (IEEE BigData)*, 2018.

3. Jun Li, **Hongfu Liu** and Yun Fu. Predictive Coding Machine for Compressed Sensing and Image Denoising. *In Proceedings of AAAI Conference on Artificial Intelligence (AAAI)*, 2018.
4. Yue Wu, Zhengming Ding, **Hongfu Liu**, Joseph Robinson and Yun Fu. Kinship Classification through Latent Adaptive Subspace. *In Proceedings of IEEE Conference on Automatic Face and Gesture Recognition (FG)*, 2018.
5. Jun Li, **Hongfu Liu**, Handong Zhao, and Yun Fu. Projective Low-rank Subspace Clustering via Learning Deep Encoder. *In Proceedings of International Joint Conference on Artificial Intelligence (IJCAI)*, 2017.
6. Zhiqiang Tao, **Hongfu Liu**, Sheng Li, Zhengming Ding and Yun Fu. From Ensemble Clustering to Multi-View Clustering. *In Proceedings of International Joint Conference on Artificial Intelligence (IJCAI)*, 2017.
7. Zhiqiang Tao*, **Hongfu Liu***, Huazhu Fu and Yun Fu. Image Cosegmentation via Saliency-Guided Constraint Clustering with Cosine Similarity. *In Proceedings of AAAI Conference on Artificial Intelligence (AAAI)*, 2017. (* means equal contribution)
8. Zhiqiang Tao, **Hongfu Liu** and Yun Fu. Simultaneous Clustering and Ensemble. *In Proceedings of AAAI Conference on Artificial Intelligence (AAAI)*, 2017.
9. Sheng Li, **Hongfu Liu**, Zhiqiang Tao and Yun Fu. Multi-View Graph Learning with Adaptive Label Propagation. *In Proceedings of IEEE International Conference on Big Data (IEEE BigData)*, 2017.
10. **Hongfu Liu**, Ming Shao, Sheng Li and Yun Fu. Infinite Ensemble for Image Clustering. *In Proceedings of ACM SIGKDD international conference on Knowledge Discovery and Data mining (KDD)*, 2016.
11. **Hongfu Liu**, Haiyi Mao and Yun Fu. Robust Multi-View Feature Selection. *In Proceedings of IEEE International Conference on Data Mining (ICDM)*, 2016.
12. **Hongfu Liu**, Ming Shao and Yun Fu. Structure-Preserved Multi-Source Domain Adaptation. *In Proceedings of IEEE International Conference on Data Mining (ICDM)*, 2016.
13. **Hongfu Liu**, Ming Shao and Yun Fu. Consensus Guided Unsupervised Feature Selection. *In Proceedings of AAAI Conference on Artificial Intelligence (AAAI)*, 2016.
14. **Hongfu Liu**, Yuchao Zhang, Bo Deng and Yun Fu. Bi-sampling Ensemble Outlier Detection. *In Proceedings of IEEE International Conference on Big Data (IEEE BigData)*, 2016.
15. Zhiqiang Tao, **Hongfu Liu**, Sheng Li and Yun Fu. Robust Spectral Ensemble Clustering. *In Proceeding of ACM International Conference on Information and Knowledge Management (CIKM)*, 2016.
16. Handong Zhao, **Hongfu Liu** and Yun Fu. Incomplete Multi-modal Visual Data Grouping. *In Proceedings of International Joint Conference on Artificial Intelligence (IJCAI)*, 2016.
17. **Hongfu Liu***, Tongliang Liu*, Junjie Wu, Dacheng Tao and Yun Fu. Spectral Ensemble Clustering. *In Proceedings of ACM SIGKDD international conference on Knowledge Discovery and Data mining (KDD)*, 2015. (* means equal contribution)
18. **Hongfu Liu** and Yun Fu. Clustering with Partition Level Side Information. *In Proceedings of IEEE International Conference on Data Mining (ICDM)*, 2015.
19. **Hongfu Liu**, Junjie Wu, Dacheng Tao, Yuchao Zhang and Yun Fu. DIAS: A Disassemble-Assemble Framework for Highly Sparse Text Clustering. *In Proceedings of SIAM International Conference on Data Mining (SDM)*, 2015.
20. **Hongfu Liu**, Cheng Gong and Junjie Wu. Consensus Clustering on big data. *In Proceedings of IEEE International Conference on Service Systems and Service Management (ICSSSM Best Paper)*, 2015.
21. **Hongfu Liu**, Yuchao Zhang, Hao Lin and Junjie Wu. How Many Zombies Around You. *In Proceedings of the IEEE International Conference on Data Mining (ICDM)*, 2013.
22. **Hongfu Liu**, Yuchao Zhang and Xue Li. Consensus Ranking From a Utility View. *In Proceeding of International Conference on Natural Computation (ICNC)*, 2013.

23. Junjie Wu, **Hongfu Liu**, Hui Xiong and Jie Cao. A Theoretic Framework of K-means-based Consensus Clustering. *In Proceedings of International Joint Conference on Artificial Intelligence (IJCAI)*, 2013.
24. Yaqiong Wang, **Hongfu Liu**, Hao Lin, Junjie Wu, Zhiang Wu and Jie Cao. SEA: A System for Event Analysis on Chinese Tweets. *In Proceedings of ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, 2013.
25. Yuchao Zhang and **Hongfu Liu**. A Reliable QoE-aware Framework for Cloud Service Monitoring and Ranking. *In Proceedings of International Conference on Electrical and Information Technologies for Rail Transportation (EITRT)*, 2013.
26. Yuchao Zhang, **Hongfu Liu** and Bo Deng. SLA-Driven State Monitoring for Cloud Services. *In Proceedings of the 15th IEEE International Conference on High Performance Computing and Communications (HPCC)*, 2013.
27. Yuchao Zhang, **Hongfu Liu** and Bo Deng. Evolutionary Clustering with DBSCAN. *In Proceeding of International Conference on Natural Computation (ICNC)*, 2013.
28. Di Zhao, **Hongfu Liu**, Hongyi Li. A Method Based on Grey Correlation Clustering for Improving the Hierarchy of Analytic Hierarchy Process. *In Proceedings of IEEE/WIC/ACM International Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT)*, 2010.

- WORKSHOP

1. Yue Wu, **Hongfu Liu**, Yun Fu. Low-shot Face Recognition with Hybrid Classifiers. *In Proceedings of International Conference on Computer Vision Workshop (ICCV-W)*, 2017.
2. Yue Wu, **Hongfu Liu**, Jun Li and Yun Fu. Deep Face Recognition with Center Invariant Loss. *In Proceedings of ACM Multimedia Thematic Workshop (MM-W)*, 2017.

PATENTS

- **Hongfu Liu**, Nikolaos Vlassis. *Customer Segmentation Via Consensus Clustering*
US Patent. Filed: 11/12/2016.
- Junjie Wu, **Hongfu Liu**, Hong Li and Xiaoting Han. *A Kind of Text Classification Method Based on Consensus Clustering*
CN Patent. Filed: 10/07/2015.

HONORS & AWARDS

- Outstanding Self-Financed Students Abroad 2018
Chinese Government Award
- First Place Award in MS-Celel-1M Grand Challenge 2017
International Conference on Computer Vision
- IJCAI Student Travel Award 2017
International Joint Conference on Artificial Intelligence
- KDD Student Travel Award 2016
ACM SIGKDD Conference on Knowledge Discovery and Data Mining
- SIGIR Student Travel Award 2016
ACM International Conference Information and Knowledge Management
- ICDM Student Travel Award 2016
IEEE Conference on Data Mining
- AAAI Student Travel Award 2016
AAAI Conference on Artificial Intelligence
- IEEE BigData Student Travel Award 2016
IEEE Conference on Big Data
- Top 20 New Star in Data Mining 2016
Microsoft Academic Search
- The inaugural Adobe Research Fellowship Finalist 2016
Adobe Research

- ICDM Student Travel Award 2015
IEEE Conference on Data Mining
 - Dean Fellowship 2014
Northeastern University
 - Outstanding Graduate 2014
Beijing Education Commission
 - Outstanding Graduate Thesis 2014
Beihang University
 - National Scholarship 2013
Ministry of Education of China
 - Top 10 Graduate 2013
School of Economics and Management in Beihang University
 - Data Mining Innovation Award 2013
China Internet Network Information Center
 - Airbus Scholarship 2012
Beihang University
 - Outstanding Volunteer Prize 2012
School of Economics and Management in Beihang University
 - Outstanding Undergraduate Thesis 2011
Beihang University
 - Outstanding Undergraduate 2011
Beijing Education Commission
 - Board Scholarships 2011
School of Economics and Management in Beihang University
 - Google Student Travel Award 2010
Student Symposium on Machine Learning and Applications
 - Citigroup Scholarship 2010
Beihang University
 - Kwang-Hua Scholarship 2009
Beihang University
 - Samsung Scholarship 2008
Beihang University
- ACADEMIC TALKS**
- ◇ **Invited Talks**
 - *From Consensus Clustering to K-means Clustering* 2018
Baidu, Sunnyvale, CA
 - *From Consensus Clustering to K-means Clustering* 2018
University of Michigan-Dearborn, Dearborn, MI
 - *From Consensus Clustering to K-means Clustering* 2018
Tulane University, New Orleans, LA
 - *From Consensus Clustering to K-means Clustering* 2018
University of Miami, Coral Gables, FL
 - *From Consensus Clustering to K-means Clustering* 2018
Stevens Institute of Technology, Hoboken, NJ
 - *From Consensus Clustering to K-means Clustering* 2018
Rochester Institute of Technology, Rochester, NY
 - *From Consensus Clustering to K-means Clustering* 2018
San Diego State University, San Diego, CA
 - *From Consensus Clustering to K-means Clustering* 2018
Brandeis University, Waltham, MA
 - *From Consensus Clustering to K-means Clustering* 2018
Case Western Reserve University, Cleveland, OH
 - *Consensus Clustering: A Tutorial* 2017
The Ohio State University, Columbus, OH

- *K-means Solution for Complex Problem*
Texas State University, San Marcos, TX 2017
- *K-means-based Consensus Clustering*
Texas A&M University, College Station, TX 2017
- *Infinite Ensemble Clustering*
Boston College, Chestnut Hill, MA 2017
- *Complex Problem, K-means Solution*
University of Illinois Urbana-Champaign, Champaign, IL 2017
- *Consensus Clustering: A K-means Clustering View*
Tufts University, Medford, MA 2017
- *Consensus Clustering for Industrial Applications*
JD, Beijing, China 2017
- *Fast Clustering with Flexible Balance Constraints*
Microsoft Research Asia, Beijing, China 2017
- *Spectral and Infinite Ensemble Clustering*
UMass Dartmouth, North Dartmouth, MA 2017
- *Greedy K-means-based Consensus Clustering*
Adobe Research, San Jose, CA 2016
- *K-means-based Consensus Clustering and its Applications*
NEPSSS, Northeastern University, Boston, MA 2015
- ◇ **Presentations at International Conferences**
- International Joint Conference on Artificial Intelligence (**IJCAI**), Melbourne, Australia 2017
- IEEE Conference on Big Data (**IEEE BigData**), Washington, D.C. 2016
- ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD**), San Francisco, CA 2016
- AAAI Conference on Artificial Intelligence (**AAAI**), Phoenix, AZ 2016
- IEEE Conference on Data Mining (**ICDM**), Atlantic City, NJ 2015
- SIAM International Conference on Data Mining (**SDM**), Vancouver, Canada 2015
- International Joint Conference on Artificial Intelligence (**IJCAI**), Beijing, China 2013
- IEEE Conference on Data Mining (**ICDM**), Dallas, TX 2013

**PROFESSIONAL
ACTIVITIES**

- **Associate Editor**
 - ◇ IEEE Computational Intelligence Magazine (**IEEE CIM**)
- **Editorial Board**
 - ◇ Architecture and Design Review
 - ◇ Annals of Mathematics and Physics
- **Publicity Chair**
 - ◇ International Workshop on Big Data Transfer Learning 2017
- **Senior Program Committee**
 - ◇ AAAI Conference on Artificial Intelligence (**AAAI**) 2019
- **Program Committee**
 - ◇ Neural Information Processing Systems (**NeurIPS**) 2019
 - ◇ SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD**) 2019
 - ◇ International Joint Conference on Artificial Intelligence (**IJCAI**) 2019
 - ◇ IEEE Conference on Machine Learning (**ICML**) 2019
 - ◇ IEEE Conference on Multimedia Information Processing and Retrieval (**MIPR**) 2019
 - ◇ IEEE Conference on Data Mining (**ICDM**) 2018
 - ◇ IEEE Conference on Big Data (**IEEE BigData**) 2018

- ◇ International Conference on Information Systems (**ICIS**) 2018
- ◇ Neural Information Processing Systems (**NIPS**) 2018
- ◇ AAAI Conference on Artificial Intelligence (**AAAI**) 2018
- ◇ IEEE Conference on Multimedia Information Processing and Retrieval (**MIPR**) 2018
- ◇ AAAI Conference on Artificial Intelligence (**AAAI**) 2017
- ◇ International Joint Conference on Artificial Intelligence (**IJCAI**) 2017
- ◇ International Conference on Machine Learning and Applications (**ICMLA**) 2017
- ◇ International Joint Conference on Artificial Intelligence (**IJCAI**) 2016
- ◇ International Conference on Machine Learning and Applications (**ICMLA**) 2016

• **Journal Reviewer**

- ◇ IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**)
- ◇ IEEE Transactions on Knowledge and Data Engineering (**TKDE**)
- ◇ IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**)
- ◇ IEEE Transactions on Image Processing (**TIP**)
- ◇ IEEE Transactions on Biomedical Engineering (**TBME**)
- ◇ IEEE Transactions on Cybernetics (**TC**)
- ◇ IEEE Transactions on Big Data (**TBD**)
- ◇ IEEE Computational Intelligence Magazine (**CIM**)
- ◇ IEEE Transactions on Emerging Topics in Computational Intelligence (**TETCI**)
- ◇ ACM Transactions on Knowledge Discovery from Data (**TKDD**)
- ◇ ACM Transactions on the Web (**TW**)
- ◇ Scientific Reports (**SR**)
- ◇ Bioinformatics (**BMC**)
- ◇ Information Science (**IS**)
- ◇ Neural Networks (**NN**)
- ◇ Applied Computing and Informatics (**ACI**)
- ◇ Computer Methods and Programs in Biomedicine (**CMPB**)
- ◇ Human-centric Computing and Information Sciences (**HCIS**)
- ◇ Journal of Electronic Imaging (**JEI**)
- ◇ International Journal on Artificial Intelligence Tools (**IJAIT**)
- ◇ Pattern Analysis and Applications (**PAA**)
- ◇ Mathematical Problems in Engineering (**MPE**)