Zhiqiang Tao

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EDUCATION

Northeastern University — Boston, MA, USA
Ph.D. Candidate in Computer Engineering — 09/2015 - now
Advisor: Professor Yun Fu

TianJin University — Tianjin, China
M.S. in Computer Science — 09/2012 - 01/2015
Advisor: Professor Xiaochun Cao

TianJin University — Tianjin, China
B.Eng. in Software Engineering — 09/2008 - 06/2012

RESEARCH INTERESTS

- **Fields:** Applied Machine Learning, Data Mining, Computer Vision
- **Themes:** Feature Representation Learning with Reconstruction and Its Applications.
- **Topics:** Unsupervised Deep Feature Learning; Ensemble Clustering; Subspace Clustering; Multi-View Learning; Sequence Learning.
- **Applications:** Image Segmentation and Clustering; Document Clustering; Video Action Prediction and Grouping; User Modeling.

INDUSTRY EXPERIENCE

- **Adobe Research** — San Jose, CA
  Research Intern — 05/2018 - 08/2018

  ◇ **Interpretable User Modeling:** Proposed a sequence-to-sequence model with recurrent memory network to learn user representations from log-trace data and software tutorials.

- **Raytheon BBN Technologies** — Cambridge, MA
  Research Intern — 05/2016 - 08/2016

  ◇ **Sentence Similarity Learning:** Developed a siamese convolution neural network to learn sentence representations with word embedding.

- **State Key Laboratory of Information Security, IIE CAS** — Beijing, China
  Research Assistant — 06/2013 - 03/2014

  ◇ **Visual Saliency Analysis:** Designed a self-adaptively weighted algorithm with low-rank matrix recovery to detect co-salient objects from multiple images.

TEACHING EXPERIENCE

- **LECTURER** — Northeastern University
  ◇ EECE5642 Data Visualization — Spring 2019
  ◇ EECE5642 Data Visualization — Fall 2018

- **ASSISTANT** — Northeastern University
  ◇ EECE5644 Machine Learning and Pattern Recognition — Fall 2017
  ◇ EECE5642 Machine Learning and Pattern Recognition — Spring 2017

HONORS &	• KDD Student Travel Award	2019
AWARDS	*ACM SIGKDD Conference on Knowledge Discovery and Data Mining*	

- AAAI Student Travel Award   2017
  AAAI Conference on Artificial Intelligence

- SIGIR Student Travel Award   2016
  ACM International Conference Information and Knowledge Management

- Dean's Fellowship   2015
  Northeastern University

- Graduate National Scholarship (top 5/200)   2015
  Ministry of Education, China

PUBLICATIONS *Citations: 270, H-index: 9, i10-index: 9 (Google Scholar, July 2019)*

- **JOURNAL PAPERS**

  ◊ 2 TPAMI, 1 TNNLS, 2 TIP, 1 TKDD, 1 TETCI, 1 SPL, and 1 PRL

  [J-1] **Zhiqiang Tao**, Hongfu Liu, Sheng Li, Zhengming Ding, and Yun Fu, "Marginalized Multi-View Ensemble Clustering", IEEE Transactions on Neural Networks and Learning Systems, *accepted*, 2019.

  [J-2] **Zhiqiang Tao**, Hongfu Liu, Huazhu Fu, and Yun Fu, "Multi-View Saliency-Guided Clustering for Image Cosegmentation", IEEE Transactions on Image Processing, *accepted*, 2019.

  [J-3] Sheng Li*, **Zhiqiang Tao***, Kang Li, and Yun Fu, "Visual to Text: Survey of Image and Video Captioning", IEEE Transactions on Emerging Topics in Computational Intelligence, *accepted*, 2019. (∗ indicates equal contribution.)

  [J-4] **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, vol. 13, no. 1, pp. 4:1-4:25, 2019.

  [J-5] Yu Kong, **Zhiqiang Tao**, and Yun Fu, "Adversarial Action Prediction Networks", accepted by IEEE Transactions on Pattern Analysis and Machine Intelligence, 2018.

  [J-6] Hongfu Liu, **Zhiqiang Tao**, and Yun Fu, "Partition Level Constrained Clustering", IEEE Transaction on Pattern Analysis and Machine Intelligence, vol. 40 , no. 10, pp. 2469-2483, 2018.

  [J-7] Changqing Zhang, **Zhiqiang Tao**, Xingxing Wei, and Xiaochun Cao," A Flexible Framework of Adaptive Method Selection for Image Saliency Detection", Pattern Recognition Letters, vol. 63, pp. 66-70, 2015.

  [J-8] Xingxing Wei, **Zhiqiang Tao**, Changqing Zhang, and Xiaochun Cao, "Structured Saliency Fusion Based on Dempster-Shafer Theory", IEEE Signal Processing Letters, vol. 22, no. 9, pp. 1345-1349, 2014.

  [J-9] Xiaochun Cao, **Zhiqiang Tao**, Bao Zhang, Huazhu Fu, and Wei Feng, "Self-adaptively Weighted Co-saliency Detection via Rank Constraint", IEEE Transaction on Image Processing, vol. 23, no. 9, pp. 4175-4186, 2014.

- **CONFERENCE PAPERS**

  ◊ 1 SIGKDD, 2 AAAI, 4 IJCAI, 1 CIKM, 1 CVPR, 1 ICDM, and 4 [IEEE Big Data, FG, ACM MM, ICME]

  [C-1] **Zhiqiang Tao**, Sheng Li, Zhaowen Wang, Chen Fang, Longqi Yang, Handong Zhao, and Yun Fu, "Log2Intent: Towards Interpretable User Modeling via Recurrent Semantics Memory Unit", SIGKDD, 2019.

  [C-2] **Zhiqiang Tao**, Hongfu Liu, Jun Li, Zhaowen Wang, and Yun Fu, "Adversarial Graph Embedding for Ensemble Clustering", IJCAI, 2019.

[C-3] Chaoyang Li, Qianqian Wang, **Zhiqiang Tao**, Quanxue Gao, and Zhaohua Yang, "Deep Adversarial Network for Multi-view Clustering", IJCAI, 2019.

[C-4] Songyao Jiang, **Zhiqiang Tao**, and Yun Fu, "Segmentation Guided Image-to-Image Translation with Adversarial Networks", FG, 2019.

[C-5] Qianqian Wang, Zhengming Ding, **Zhiqiang Tao**, Quanxue Gao, and Yun Fu, "Partial Multi-View Clustering via Consistent GAN", ICDM, 2018.

[C-6] **Zhiqiang Tao**, Hongfu Liu, Sheng Li, Zhengming Ding, and Yun Fu, "From Ensemble Clustering to Multi-View Clustering", IJCAI, 2017.

[C-7] Jun Li, Handong Zhao, **Zhiqiang Tao**, and Yun Fu, "Large-scale Subspace Clustering by Fast Regression Coding", IJCAI, 2017.

[C-8] Yu Kong, **Zhiqiang Tao**, and Yun Fu, "Deep Sequential Context Networks for Action Prediction", CVPR, 2017.

[C-9] **Zhiqiang Tao**, Hongfu Liu, Huazhu Fu, and Yun Fu, "Image Cosegmentation via Saliency-Guided Constraint Clustering with Cosine Similarity", AAAI, 2017.

[C-10] **Zhiqiang Tao**, Hongfu Liu, and Yun Fu, "Simultaneous Clustering and Ensemble", AAAI, 2017.

[C-11] Sheng Li, Hongfu Liu, **Zhiqiang Tao**, and Yun Fu, "Multi-View Graph Learning with Adaptive Label Propagation", IEEE International Conference on Big Data, 2017.

[C-12] **Zhiqiang Tao**, Hongfu Liu, Sheng Li, and Yun Fu, "Robust Spectral Ensemble Clustering", CIKM, 2016.

[C-13] Xiaochun Cao, Yupeng Cheng, **Zhiqiang Tao**, and Huazhu Fu, "Co-saliency Detection via Base Reconstruction", ACM MM, 2014.

[C-14] Xiaochun Cao, **Zhiqiang Tao**, Bao Zhang, Huazhu Fu, and Xuewei Li, "Saliency Map Fusion Based on Rank-one Constraint", ICME, 2013.

- **PREPRINTS**

[P-1] **Zhiqiang Tao**, Hongfu Liu, Yu Kong, and Yun Fu, "Higher-Order Subspace Clustering via Cluster Structure Encoding", submitted to IEEE Transactions on Pattern Analysis and Machine Intelligence, *under review*, 2019.

[P-2] Hongfu Liu, **Zhiqiang Tao**, Zhengming Ding, and Yun Fu, "Semantics Recovery for Generalized Image Understanding", submitted to IEEE Transactions on Pattern Analysis and Machine Intelligence, *under review*, 2019.

[P-3] Hongfu Liu, **Zhiqiang Tao**, Zhengming Ding, and Yun Fu, "Consensus Clustering: An Embedding Perspective, Extension and Beyond", *arXiv preprint arXiv:1906.00120*, 2019.

[P-4] Jun Li, Hongfu Liu, **Zhiqiang Tao**, Handong Zhao, and Yun Fu, "Learnable Subspace Clustering", submitted to IEEE Transactions on Neural Networks and Learning Systems, *under review*, 2019.

[P-5] Jun Li, **Zhiqiang Tao**, Yue Wu, and Yun Fu, -, submitted to ICDM, 2019.

[P-6] Lichen Wang, Zhengming Ding, **Zhiqiang Tao**, Yunyu Liu, and Yun Fu, -, submitted to ICCV, 2019.

[P-7] Qianqian Wang, Zhengming Ding, **Zhiqiang Tao**, Quanxue Gao, and Yun Fu, "Generative Partial Multi-View Clustering", 2019.

PROFESSIONAL ACTIVITIES

- **Program Committee**
  - ◊ IJCAI-2019 TUSION Workshop — 2019
  - ◊ AAAI Conference on Artificial Intelligence — 2019
  - ◊ IEEE International Conference on Multimedia and Expo (ICMEW) — 2019
  - ◊ AAAI Conference on Artificial Intelligence — 2018
  - ◊ MICCAI Workshop on Ophthalmic Medical Image Analysis — 2016

- **Journal Reviewer**
  - ◊ IEEE Transactions on Neural Networks and Learning Systems
  - ◊ IEEE Transactions on Cybernetics
  - ◊ IEEE Transactions on Control Systems Technology
  - ◊ IEEE Transactions on Emerging Topics in Computational Intelligence
  - ◊ IEEE Computational Intelligence Magazine
  - ◊ Image and Vision Computing
  - ◊ Neurocomputing
  - ◊ Journal of Electronic Imaging (JEI)