

Zhiqiang Tao

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EDUCATION

Northeastern University Ph.D. in Computer Engineering <i>Advisor:</i> Professor Yun Raymond Fu	Boston, MA, USA 09/2015 - 08/2020
Tianjin University M.S. in Computer Science <i>Advisor:</i> Professor Xiaochun Cao	Tianjin, China 09/2012 - 01/2015
Tianjin University B.Eng. in Software Engineering	Tianjin, China 09/2008 - 06/2012

RESEARCH INTERESTS

- **Fields:** Machine Learning, Data Mining, Computer Vision
- **Topics:** Unsupervised Deep Feature Learning; Autoencoders; Ensemble Clustering; Multi-View Learning; Sequence Learning, Auto-ML, Hyperparameter Optimization
- **Applications:** Image Segmentation and Clustering; Document Clustering; Video Action Prediction and Grouping; User Modeling.

WORK EXPERIENCE

- | | |
|--|--------------------------|
| • Tenure-Track Assistant Professor
Department of Computer Science and Engineering
Santa Clara University, Santa Clara, CA | 09/2020 - <i>Present</i> |
| • Part-Time Teaching Faculty
Department of Electrical and Computer Engineering
Northeastern University, Boston, MA | 09/2018 - 12/2019 |

INDUSTRY EXPERIENCE

- | | |
|---|------------------------------------|
| • Alibaba's DAMO Academy
Research Intern | Bellevue, WA
05/2019 - 08/2019 |
| • Adobe Research
Research Intern | San Jose, CA
05/2018 - 08/2018 |
| • Raytheon BBN Technologies
Research Intern | Cambridge, MA
05/2016 - 08/2016 |

HONORS & AWARDS

- | | |
|---|------|
| • Third Place Award in KDD Cup Auto-ML Track
<i>ACM SIGKDD Conference on Knowledge Discovery and Data Mining</i> | 2019 |
| • KDD Student Travel Award
<i>ACM SIGKDD Conference on Knowledge Discovery and Data Mining</i> | 2019 |
| • AAAI Student Travel Award
<i>AAAI Conference on Artificial Intelligence</i> | 2017 |
| • SIGIR Student Travel Award
<i>ACM International Conference Information and Knowledge Management</i> | 2016 |
| • Dean's Fellowship
<i>Northeastern University</i> | 2015 |
| • Graduate National Scholarship (top 5/200)
<i>Ministry of Education, China</i> | 2015 |

TEACHING EXPERIENCE

- **Instructor** Santa Clara University
 ◇ EOEN240 Machine Learning Fall 2020
- **Instructor** Northeastern University
 ◇ EECE5642 Data Visualization Fall 2019
 ◇ EECE5642 Data Visualization Spring 2019
 ◇ EECE5642 Data Visualization Fall 2018
- **Teaching Assistant** Northeastern University
 ◇ EECE5644 Machine Learning and Pattern Recognition Fall 2017
 ◇ EECE5642 Machine Learning and Pattern Recognition Spring 2017

PROPOSAL WRITING

Key Contributor for Funded Proposals:

1. Multi-Functional Optical Meta-Systems Enabled by Deep-Learning \$529,539
 -Aided Inverse Design
NSF Electrical, Communications and Cyber Systems 06/2019 - 05/2022

Key Contributor for Pending Proposals:

2. FAI: Visual Relational Fairness: Identification, Inference and Generalization
NSF Information and Intelligent Systems 2019
3. Modernizing the Science and Management of Sidewalks: Capitalizing on and Responding to Emergent Technologies
NSF Smart and Connected Communities 2019

PUBLICATIONS *Citations: 536, h-index: 12, i10-index: 15 (Google Scholar, Oct. 2020)*

• 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*, vol. 31, no. 2, pp. 600-611, 2020.
- [J-2] **Zhiqiang Tao**, Hongfu Liu, Huazhu Fu, and Yun Fu, “Multi-View Saliency-Guided Clustering for Image Cosegmentation”, *IEEE Transactions on Image Processing*, vol. 28, no. 9, pp. 4634-4645, 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*, vol. 3, no. 4, pp. 297-312, 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”, *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 42, no. 3, pp. 539-553, 2020.
- [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 NeurIPS, 1 SIGKDD, 2 AAAI, 5 IJCAI, 1 CIKM, 1 CVPR, 1 ICCV, 1 ICLR, 1 ICDM, and 4 [IEEE Big Data, FG, ACM MM, ICME]
- [C-1] **Zhiqiang Tao**, Yaliang Li, Bolin Ding, Ce Zhang, Jingren Zhou, and Yun Fu, “Learning to Mutate with Hypergradient Guided Population”, *NeurIPS*, 2020.
- [C-2] Jiafeng Cheng, Qianqian Wang, **Zhiqiang Tao**, Deyan Xie, and Quanxue Gao, “Multi-View Attribute Graph Convolution Networks for Clustering”, *IJCAI*, 2020.
- [C-3] Huaxiu Yao, Xian Wu, **Zhiqiang Tao**, Yaliang Li, Bolin Ding, Ruirui Li, Zhenhui Li, “Automated Relational Meta-learning”, *ICLR*, 2020.
- [C-4] **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-5] **Zhiqiang Tao**, Hongfu Liu, Jun Li, Zhaowen Wang, and Yun Fu, “Adversarial Graph Embedding for Ensemble Clustering”, *IJCAI*, 2019.
- [C-6] Chaoyang Li, Qianqian Wang, **Zhiqiang Tao**, Quanxue Gao, and Zhaohua Yang, “Deep Adversarial Network for Multi-view Clustering”, *IJCAI*, 2019.
- [C-7] Lichen Wang, Zhengming Ding, **Zhiqiang Tao**, Yunyu Liu, and Yun Fu, “Generative Multi-View Human Action Recognition”, *ICCV*, 2019.
- [C-8] Songyao Jiang, **Zhiqiang Tao**, and Yun Fu, “Segmentation Guided Image-to-Image Translation with Adversarial Networks”, *FG*, 2019.
- [C-9] Qianqian Wang, Zhengming Ding, **Zhiqiang Tao**, Quanxue Gao, and Yun Fu, “Partial Multi-View Clustering via Consistent GAN”, *ICDM*, 2018.
- [C-10] **Zhiqiang Tao**, Hongfu Liu, Sheng Li, Zhengming Ding, and Yun Fu, “From Ensemble Clustering to Multi-View Clustering”, *IJCAI*, 2017.
- [C-11] Jun Li, Handong Zhao, **Zhiqiang Tao**, and Yun Fu, “Large-scale Subspace Clustering by Fast Regression Coding”, *IJCAI*, 2017.
- [C-12] Yu Kong, **Zhiqiang Tao**, and Yun Fu, “Deep Sequential Context Networks for Action Prediction”, *CVPR*, 2017.
- [C-13] **Zhiqiang Tao**, Hongfu Liu, Huazhu Fu, and Yun Fu, “Image Cosegmentation via Saliency-Guided Constraint Clustering with Cosine Similarity”, *AAAI*, 2017.
- [C-14] **Zhiqiang Tao**, Hongfu Liu, and Yun Fu, “Simultaneous Clustering and Ensemble”, *AAAI*, 2017.
- [C-15] 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-16] **Zhiqiang Tao**, Hongfu Liu, Sheng Li, and Yun Fu, “Robust Spectral Ensemble Clustering”, *CIKM*, 2016.
- [C-17] Xiaochun Cao, Yupeng Cheng, **Zhiqiang Tao**, and Huazhu Fu, “Co-saliency Detection via Base Reconstruction”, *ACM MM*, 2014.
- [C-18] 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**, Jun Li, Huazhu Fu, Yu Kong, and Yun Fu, “Higher-Order Subspace Clustering via Cluster Structure Encoding”, submitted to IEEE Transactions on Neural Networks and Learning Systems, *under review*, 2020.
- [P-2] Jun Li, **Zhiqiang Tao**, Bineng Zhong, Yue Wu, and Yun Fu, “Large-Scale Subspace Clustering by Independent Distributed and Parallel Coding”, submitted to IEEE Transactions on Cybernetics, *under review*, 2020.
- [P-3] Songyao Jiang, **Zhiqiang Tao**, and Yun Fu, “Geometrically Editable Image-to-Image Translation with Adversarial Networks”, submitted to IEEE Transactions on Image Processing, *major revision*, 2020.
- [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*, 2020.
- [P-5] Qianqian Wang, Zhengming Ding, **Zhiqiang Tao**, Quanxue Gao, and Yun Fu, “Generative Partial Multi-View Clustering”, *arXiv preprint arXiv:2003.13088*, 2020.
- [P-6] Yue Bai, **Zhiqiang Tao**, Lichen Wang, Sheng Li, Yin Yu, and Yun Fu, “Collaborative Attention Mechanism for Multi-View Action Recognition”, *arXiv preprint arXiv:2009.06599*, 2020.

PROFESSIONAL • Program Committee ACTIVITIES

◇ International Joint Conference on Artificial Intelligence	2021
◇ AAAI Conference on Artificial Intelligence	2021
◇ Neural Information Processing Systems	2020
◇ AAAI Conference on Artificial Intelligence	2020
◇ International Joint Conference on Artificial Intelligence	2020
◇ AAAI Conference on Artificial Intelligence	2020
◇ AAAI Conference on Artificial Intelligence	2019
◇ IEEE International Conference on Multimedia and Expo (ICMEW)	2019
◇ AAAI Conference on Artificial Intelligence	2018

• Journal Reviewer

◇ IEEE Transactions on Neural Networks and Learning Systems
◇ IEEE Transactions on Knowledge and Data Engineering
◇ IEEE Transactions on Image Processing
◇ IEEE Transactions on Cybernetics
◇ IEEE Transactions on Multimedia
◇ IEEE Transactions on Cognitive and Developmental Systems
◇ IEEE Transactions on Emerging Topics in Computational Intelligence
◇ IEEE Computational Intelligence Magazine
◇ Pattern Recognition
◇ Image and Vision Computing
◇ Neurocomputing
◇ Journal of Electronic Imaging (JEI)

ACADEMIC TALKS

• SIGKDD, Anchorage, Alaska	Aug. 3-7, 2019
• AAAI, San Francisco, California	Feb. 4-9, 2017
• CIKM, Indianapolis, Indiana	Oct. 24-28, 2016