

# Taotao Jing

Address: 6823 St. Charles Avenue, New Orleans, USA 70118 Phone: +1 (\*\*\*)\*\*\*-\*\*\*\* Email: tjing@tulane.edu

[\[Google Scholar\]](#) [\[DBLP\]](#) [\[Home Page\]](#) [\[Research Gate\]](#) [\[LinkedIn\]](#) [\[Github\]](#)

## EDUCATION

**School of Science & Engineering | Tulane University**

New Orleans, USA

*Ph.D. candidate in Computer Science*

Jan. 2021 - **Present**

**Purdue School of Engineering & Technology | Purdue University**

Indianapolis, USA

*Ph.D. student in Electrical and Computer Engineering (transferred out)*

Jan. 2019 - Dec. 2020

**Department of Electrical & Computer Engineering | Northeastern University**

Boston, USA

*M.S. in Computer System Engineering*

Sep. 2016 - May 2018

**Department of Electronic and Information Engineering | Xi'an Jiaotong University**

Xi'an, China

*B.S. in Electronic Science and Technology*

Sep. 2012 - Jul. 2016

## RESEARCH PROJECTS

**Pedestrian Situated Intent Dataset and Interpretable Decision Estimation**

Aug. 2021 – May. 2022

Research Assistant | Tulane University, New Orleans, USA

Supervisor: *Prof. Zhengming Allan Ding*

- Built up a novel pedestrian behavior dataset for socially intelligent autonomous vehicle
- Proposed a novel interpretable driving decision prediction framework achieving SOTA performance
- Proposed a pedestrian crossing intention prediction model with a spatial-temporal graph based on relevant traffic agents

**Augmented Multi-Modality Fusion for Generalized Zero-Shot Sketch-based Visual Retrieval**

Mar. 2021 - June. 2021

Research Assistant | Tulane University, New Orleans, USA

Supervisor: *Prof. Zhengming Allan Ding*

- Proposed an augmented multi-modality fusion framework to discover novel knowledge unseen in the training data in both visual and semantic space for generalized zero-shot sketch-based image retrieval (GZS-SBIR) problem
- Achieved superior performance on existing GZS-SBIR benchmarks and a new evaluation protocol over SOTA

**Towards Novel Target Discovery Through Open-Set Domain Adaptation**

Nov. 2020 - Mar. 2021

Research Assistant | Tulane University, New Orleans, USA

Supervisor: *Prof. Zhengming Allan Ding*

- Proposed a challenging but practical task as understanding the unknown categories in the open-set tasks
- Designed an effective framework to identify seeing categories and recover semantic attributes for unseen categories
- Constructed two cross-domain open-set recognition and semantic recovery benchmarks to evaluate the framework

**Adversarial Dual Distinct Classifier for Unsupervised Domain Adaptation**

Mar. 2019 - Jun. 2019

Research Assistant | Purdue University, Indianapolis, USA

Supervisor: *Prof. Zhengming Allan Ding*

- Exploited dual task-specific classifiers architecture to align cross-domain distribution and decision boundaries
- Proposed a novel discriminative cross-domain alignment loss and importance guided optimization strategy to mitigate the cross-domain mismatching and learn the domain-invariant embedding features across domains
- Created new state-of-the-art on several cross-domain visual unsupervised domain adaptation benchmarks

**EV-Action: Electromyography-Vision Multi-Modal Action Dataset**

Jan. 2018 - Jul. 2018

Research Assistant | SMILE Lab, NEU, Boston, USA

Supervisor: *Prof. Yun Raymond Fu*

- Collected and introduced the first, large-scale EV-Action dataset consisting of RGB, depth, electromyography, and two skeleton modalities for human action recognition tasks including over 7,000 samples from 70 human subjects
- Proposed an effective framework for EMG-based action recognition and reported the state-of-the-art performance

## PUBLICATIONS & PREPRINTS

- **Jing, Taotao**, Haifeng Xia, Jihun Hamm, and Zhengming Ding. “Augmented Multi-Modality Fusion for Generalized Zero-Shot Sketch-based Visual Retrieval.” *IEEE Transactions on Image Processing (TIP)*, 2022.
- **Jing, Taotao**, Bingrong Xu, Jingjing Li, and Zhengming Ding. “Towards Fair Knowledge Transfer for Imbalanced Domain Adaptation.” *IEEE Transactions on Image Processing (TIP)*, 2021.
- **Jing, Taotao**, Hongfu Liu, and Zhengming Ding. “Towards Novel Target Discovery Through Open-Set Domain Adaptation.” *Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV) (Oral)*, 2021
- Xia, Haifeng, **Taotao Jing**, and Zhengming Ding. “Semi-supervised Domain Adaptation Retrieval via Discriminative Hashing Learning.” *Proceedings of the ACM International Conference on Multimedia (MM)*, 2021.
- **Jing, Taotao**, and Zhengming Ding. “Adversarial Dual Distinct Classifiers for Unsupervised Domain Adaptation.” *Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*, 2020.
- **Jing, Taotao**, Haifeng Xia, and Zhengming Ding, “Adaptively-Accumulated Knowledge Transfer for Partial Domain Adaptation.” *Proceedings of the ACM International Conference on Multimedia (MM)*, 2020.
- Wang, Lichen, Bin Sun, Joseph Robinson, **Taotao Jing**, and Yun Fu. “EV-Action: Electromyography-Vision Multi-Modal Action Dataset.” *IEEE International Conference on Automatic Face and Gesture Recognition (FG)*, 2020.

## TECHNICAL SKILLS

**Machine Learning:** PyTorch, TensorFlow, Python, MATLAB, Keras

**Programming:** Java, MySQL, MongoDB, JavaScript, Shell, Spring MVC, HTML, AngularJS, CSS, Git, LaTeX, Linux