

Chaoqi Chen

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EDUCATION

Xiamen University, Xiamen, China

Sept. 2017 - Jun. 2020

Master of Information and Communication Engineering

Xiamen University, Xiamen, China

Sept. 2013 - Jul. 2017

Bachelor of Electronic Information Science and Technology

RESEARCH INTERESTS

Machine Learning, Computer Vision, Transfer Learning, Unsupervised Learning, Low-Shot Learning

PUBLICATIONS

Chaoqi Chen, Zebiao Zheng, Xinghao Ding, Yue Huang, Qi Dou. **Harmonizing Transferability and Discriminability for Adapting Object Detectors**. IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2020.

Chaoqi Chen, Weiping Xie, Wenbing Huang, Yu Rong, Xinghao Ding, Yue Huang, Tingyang Xu, Junzhou Huang. **Progressive Feature Alignment for Unsupervised Domain Adaptation**. IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2019.

Chaoqi Chen, Weiping Xie, Yi Wen, Yue Huang, Xinghao Ding. **Multiple-Source Domain Adaptation with Generative Adversarial Nets**. *Knowledge-Based Systems* (IF=5.101, doi: 10.1016/j.knosys.2020.105962).

Chaoqi Chen, Weiping Xie, Yue Huang, Xian Yu and Xinghao Ding. **Weakly-Supervised Man-Made Object Recognition in Underwater Optical Image through Deep Domain Adaptation**. International Conference on Neural Information Processing (ICONIP), 2018.

Jiexiang Wang, Hongyu Huang, **Chaoqi Chen**, Wenao Ma, Yue Huang, Xinghao Ding. **Multi-sequence Cardiac MR Segmentation with Adversarial Domain Adaptation Network**. The Statistical Atlases and Computational Modeling of the Heart (STACOM) workshop, MICCAI, 2019.

PREPRINTS

Chaoqi Chen, Weiping Xie, Tingyang Xu, Yu Rong, Wenbing Huang, Xinghao Ding, Yue Huang, Junzhou Huang. **Learning Transferable Graph Representations for Unsupervised Graph Alignment**.

Chaoqi Chen, Weiping Xie, Tingyang Xu, Yu Rong, Wenbing Huang, Xinghao Ding, Yue Huang, Junzhou Huang. **Unsupervised Adversarial Graph Alignment with Graph Embedding**.

Chaoqi Chen, Zebiao Zheng, Xinghao Ding, Yue Huang, Qi Dou. **Local and Global Adaptability Parsing for Cross-domain Lesion Detection in Biomedical Images**. submitted to IEEE Transactions on Cybernetics.

RESEARCH EXPERIENCE

Research Intern, Machine Learning Group, Tencent AI Lab

Dec. 2018 - Jun. 2019

Advisors: Dr. Tingyang Xu, Dr. Wenbing Huang, Dr. Yu Rong, and Prof. Junzhou Huang

Projects on Graph Alignment

Paper: Unsupervised Adversarial Graph Alignment with Graph Embedding

- Proposed an Unsupervised Adversarial Graph Alignment (UAGA) framework to learn a cross-graph alignment between two embedding spaces of different graphs in a fully unsupervised fashion.
- Developed a cross-graph similarity adaptation to mitigate the hubness problem and refined the cross-domain mapping by high-quality pseudo anchor links.
- Proposed incremental UAGA (iUAGA) which utilizes the pseudo anchor links obtained in the refinement procedure to extend the training graphs by iteratively revealing the unobserved user links and re-training our UAGA model with the extended training graphs.
- Implemented iUAGA and wrote the paper.

Paper: Learning Transferable Graph Representations for Unsupervised Graph Alignment

- Proposed an end-to-end unsupervised graph alignment framework, which jointly leverages the side information and the topological structure for learning transferable graph representations. We also extend the iUAGA to an end-to-end version.
- Added an orthogonality constraint to the linear mapping and verified its superiority.
- Conditioned the embedding features of UAGA on additional vertex attributes (using tensor product) and provided an unbiased estimate of the tensor product results by the randomized multilinear map.

Paper: Multiple-Source Domain Adaptation with Generative Adversarial Nets (knowledge-Based Systems)

- Presented the first GAN-enabled MSA framework which introduces multiple encoders/decoders and a joint feature space to learn multiple bidirectional transformations in an unified GAN framework efficiently and simultaneously.
- Constructed a target-specific classifier to learn class discriminative representations by utilizing the enlarged target dataset (synthetic target images+ pseudo-labeled target images).
- Exceeded state-of-the-art results on several standard domain adaptation datasets, implemented the proposed model and wrote the paper.

Research Assistant, Lab of Smart Data and Signal Processing, Xiamen University

Sept. 2017 - Jun. 2020

Advisors: Prof. Yue Huang and Prof. Xinghao Ding

Projects on Domain Adaptation**Paper: Progressive Feature Alignment for Unsupervised Domain Adaptation (CVPR'19)**

- Proposed a new Unsupervised Domain Adaptation paradigm to explicitly and progressively enforce the cross-domain category alignment.
- Proposed a novel Easy-to-Hard Transfer Strategy (EHTS) to select reliable pseudo-labeled samples and the falsely pseudo-labeled samples are alleviated by the proposed Adaptive Prototype Alignment (APA).
- Theoretical analysis proved that our approach improves the upper bound of the target expected error.
- Designed a series of in-depth experiments for different datasets, methods, and configurations, conducted and analyzed all experiments. Achieved state-of-the-art results on three UDA datasets and wrote the paper.

Paper: Weakly-Supervised Man-Made Object Recognition in Underwater Optical Image through Deep Domain Adaptation (ICONIP'18)

- Proposed a weakly supervised framework for underwater man-made object recognition by leveraging large-scale labeled source images (in-air) and sparsely labeled underwater images (underwater).
- Reduced the domain discrepancy by domain adversarial training and cross-domain semantic alignment.
- Achieved huge accuracy boost compared to the best-performing baselines (10~20%). Implemented the proposed model, reimplemented state-of-the-art methods and wrote the paper.

Paper: Local and Global Adaptability Parsing for Cross-domain Lesion Detection in Biomedical Images

- Proposed a general method for cross-domain lesion detection in biomedical images.
- A novel uncertainty-based adaptability parsing were developed in both local and global levels.
- Extensively evaluated our proposed method on mammography mass detection with a 2D Faster R-CNN, and pulmonary nodule detection in CT with a 3D version of YOLOv2.
- Implemented the proposed model, reimplemented state-of-the-art methods and wrote the paper.

HONORS AND AWARDS

Outstanding Graduate Award (2020), Xiamen University Scholarship (2019, 2020), The First Prize Scholarship (2015, 2016, 2017)

ACADEMIC ACTIVITIES

Journal/Conference Reviewer: IEEE TIP, IEEE TGRS, Knowledge-Based Systems, ACM MM 2020, ICME 2020

Review Assistant: AAAI 2019, 2020; CVPR 2019, 2020; ICML 2019, 2020; ICCV 2019; NeurIPS 2019

SKILLS

Programming	Python, Matlab, C, Latex
Framework	PyTorch, TensorFlow, Caffe
Languages	English, Chinese (native speaker)