

Chaoqi Chen

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EDUCATION

Xiamen University, Xiamen, China

Sept. 2017 - Jul. 2020 (*expected*)

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, Semi-Supervised Learning, Low-Shot Learning

PUBLICATIONS

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) (**Core Rank A***), 2019.

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) (**Core Rank A**), 2018.

Chaoqi Chen, Zebiao Zheng, Xinghao Ding, Yue Huang, Qi Dou. Harmonizing Transferability and Discriminability for Adapting Object Detectors. CVPR, 2020 (**under review, got 1 strong accept and 2 borderline**).

Chaoqi Chen, Weiping Xie, Yi Wen, Yue Huang, Xinghao Ding. **Multiple-Source Domain Adaptation with Generative Adversarial Nets**. submitted to **knowledge-Based Systems (IF=5.101)** (minor revision).

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**.

C. Chen, Z. Zheng, X. Ding, Y. Huang, Q. Dou. **Local and Global Adaptability Parsing for Cross-domain Lesion Detection in Biomedical Images**. submitted to IEEE Transactions on Medical Imaging (IF=7.816).

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 - Present

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

National Second Prize of the National Undergraduate Electronics Design Contest (2015)

National Third Prize of the University Student Social Practice and Science Contest on Energy Saving (2016)

Xiamen University Scholarship (2019), The First Prize Scholarship (2015, 2016, 2017)

ACADEMIC ACTIVITIES

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

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

SKILLS

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