Yifan Wang

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Education

Shandong University *Jinan, China*

B.S. in Mathematics and applied mathematics, Sep. 2018 - Jun. 2022

GPA 83.2/100

Research Interests

- **Domain Adaptation.[1,2,3,5]** To transfer knowledge from the labeled source domain to the unlabeled target domain and classify test images from target domain.
- **Unsupervised Learning.[4]** To train a neural network for images classification in an unsupervised manner.
- **Contrastive Learning.[1,4]** To learn discriminative feature representation features without any manual annotations to generalize to other downstream tasks

Publications & Manuscripts

[1] **Yifan Wang**, Lin Zhang, Author3, et al. "Title 1 Title 1 Title 1 Title 1 Title 1 Title 1 Title 1 Title 1 Title 1 ," *T-PAMI under review*, 9:213-243, 202x. [Link]

[2] **Yifan Wang**, Lin Zhang, Ran Song, Lin Ma, Wei Zhang. "Exploiting Inter-Sample Affinity for Knowability-Aware Universal Domain Adaptation" *IJCV Under review* [Paper]

[3] **Yifan Wang**, Lin Zhang, Ran Song, Qian Zhang, Xiaolei Li, and Wei Zhang. "KAUDA: Knowability-Aware Universal Domain Adaptation" *IEEE TIP Under review*

[4] Lin Zhang, Ran Song, **Yifan Wang**, Qian Zhang, Xiaolin Wei, Lin Ma, and Wei Zhang* "Dual-Graph Contrastive Learning for Unsupervised Person Re-Identification" *IEEE TIP Under review*

Research Experiences

Vsislab @ Shandong University *Jinan, China*

Advisor: Prof. Wei Zhang Mar. 2021 - Present

KAUDA: Knowability-Aware Universal Domain Adaptation

- Proposed a new framework, namely KAUDA, based on the awareness of the knowability of target samples to exploit the inter-sample relationship between source and target domains for UDA with a solid theoretical analysis.
- Introduced the uniform unknown loss based on the knowability to adjust the boundary of unknown classes away from the known classes.
- Proposed an automatic scheme to progressively adjust a threshold which adapts to the change of the distribution of the knowability of all target samples at different training stages.

Exploiting Inter-Sample Affinity for Universal Domain Adaptation

- We proposed a novel unknown estimation based on the neighborhood searching cross-domain to pre-classify a target sample as the known or unknown sample based on the consistency of its neighbors in source domain.
- Designed three losses of target domain to reduce the inter-sample affinity between the unknown classes and the known classes while increase that in a known object class in the target domain.

A Novel Framework based on Unknown Estimation via Principal Sub-space for Universal Domain Adaption

- Given an empirical estimation of posterior probability of a target sample being an unknown sample through its neighborhood information searched from the source domain.
- Proposed a novel non-parameter unknown detection method via mapping the features in the original feature space into a principal linear sub-space where the distribution of samples in the sub-space is more sparse and discriminative which can reduce the domain misalignment.
- Proposed a novel unknown-adaptive margin loss to balance confidences of known target samples and unknown target samples which can adeptly control the gradient updating of the classifier learning on the source domain based on the mean entropy output by the classifier of detected unknown samples currently.

Awards and Honors

Dec. 2020 **Scholarship**: "Third Academic Scholarship" *Jinan*

Academic Services

- Reviewer for ECCV 2022 and BMVC 2022