Weekly Report

Summary of work completed in the last week:

1. Collated the minutes of the 12.19 group meeting
2. Completed the final version of the recommendation letter
3. Systematic review and commentary of LRGAN papers
4. The first draft of the abstract was completed and then further revised in light of the 12.26 meeting and the current result is:

Abstract

The development of Visible-Infrared Re-Identification (VI-ReID) has played an essential role in optimizing intelligent surveillance systems, especially for public safety and criminal targeting. However, VI-ReID is a challenging problem due to the need for more annotation of infrared images and modality discrepancy. Most existing unsupervised learning methods focus on the generation of pseudo labels and the alignment of pseudo labels and infrared images. However, the problem of hard negative samples due to the similarity of clothing worn or body shape has not been appropriately addressed by existing approaches. The presence of hard negative samples can lead to a degradation in the performance of the classifier when two images of the same identity are fed into the adversary network at the same time. Therefore, we propose the first XXXX adversary network, which enjoys two technical contributions: 1) First, we propose an XXXX module that combines Lipschitz Continuity to reduce the probability of misclassification and corresponds to different modalities of the same identity using Mahalanobis Distances. 2) we propose to generate two more plausible hard negative samples in different modalities based on the inter-modal complementarity and intra-modal similarity, which can be used as input to the adversary, thus improving the recognition ability of the classifier. Experimentally, we have achieved the XXXX level.

5. Refine related works based on methodology and discussions in meetings and start to draw mind maps based on papers (not yet finished)

2. Related Works

2.1. Visible-infrared Person Re-ID

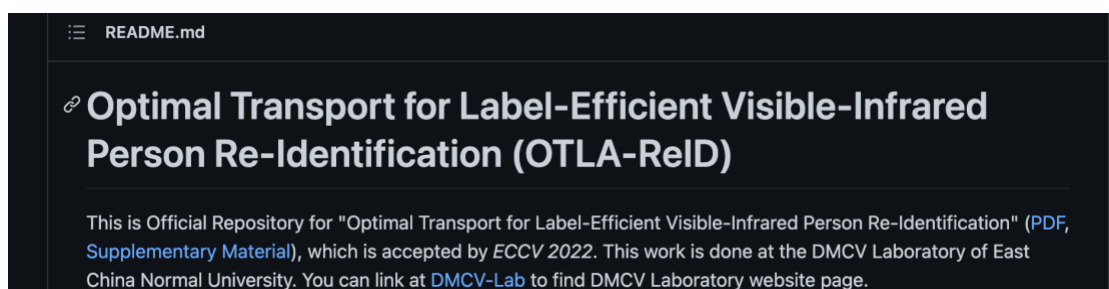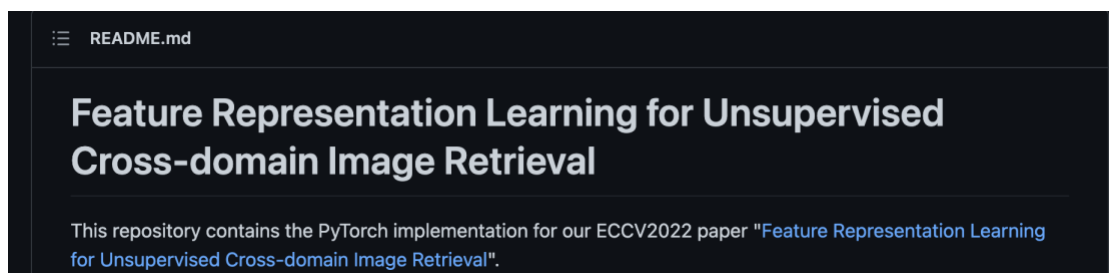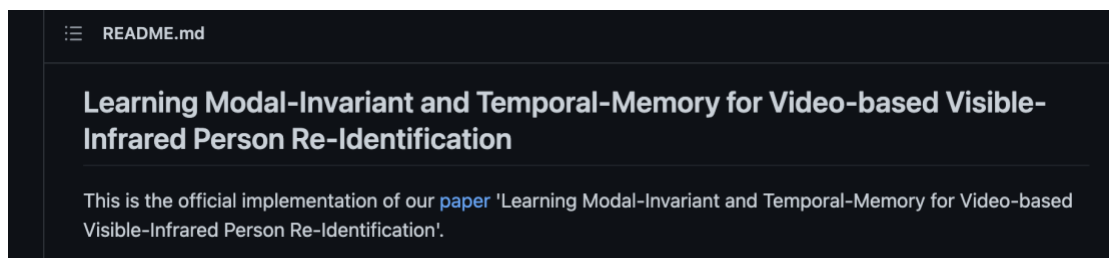### 2.2. Unsupervised representation learning

2.3. Unsupervised Cross-Modality image Retrieval

6. Read the papers on event camera representation sent to me by yunfan, and do a mind map of this section and write the content (I haven't finished reading the papers yet)

📄 02-NeurIPS-2020-lea...ent-camera-Paper.pdf	2022年11月19日 11:00
📄 03-HATS-Sironi_HAT...CVPR_2018_paper.pdf	2022年11月19日 14:08
📄 04-SAT.pdf	2022年11月20日 15:00
📄 05-N-ImageNet_Towa...meras_ICCV_2021.pdf	2022年11月21日 23:03
📄 High_Speed_and_Hig...an_Event_Camera.pdf	2022年11月19日 10:59
📄 N-ImageNet_Towards...meras_ICCV_2021.pdf	2022年11月21日 15:14

Objectives for this week:
1. For the VI-ReID project, I will try to complete the code for the adversary network by reproducing three models.

≡ README.md

Learning Modal-Invariant and Temporal-Memory for Video-based Visible-Infrared Person Re-Identification

This is the official implementation of our paper 'Learning Modal-Invariant and Temporal-Memory for Video-based Visible-Infrared Person Re-Identification'.

≡ README.md

Feature Representation Learning for Unsupervised Cross-domain Image Retrieval

This repository contains the PyTorch implementation for our ECCV2022 paper "Feature Representation Learning for Unsupervised Cross-domain Image Retrieval".

≡ README.md

⬡ Optimal Transport for Label-Efficient Visible-Infrared Person Re-Identification (OTLA-ReID)

This is Official Repository for "Optimal Transport for Label-Efficient Visible-Infrared Person Re-Identification" (PDF, Supplementary Material), which is accepted by *ECCV 2022*. This work is done at the DMCV Laboratory of East China Normal University. You can link at DMCV-Lab to find DMCV Laboratory website page.

2. For the event project, I will finish reading the 6 papers and start the first draft of the content based on the mind map.
3. For the Mphil application, I plan to complete the application submission on Wednesday and Thursday this week as my other Recommendation Letter Professor said he is busy until Wednesday.