Zero-shot Person Re-identification via Cross-view Consistency
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### Introduction

Person re-identification, aiming to identify images of the same person from various cameras configured in different places. In this problem, choosing a proper distance metric is a crucial aspect, and many classic methods utilized a uniform learnt metric. However, Zero-shot. The incomplete training situation, where the trained model may not be well generalized to cover novel classes (persons) not included in the training set, always appears in real applications. As a result, the training and testing samples have different and potentially unrelated classes (persons), and this is called a zero-shot problem. Therefore, a uniform metric is improper.

Fine-grained. The essence of the metric learning method is to seek a projection matrix that constructs a linear relationship between two cameras, but the established relationship is exploited to evaluate image pairs of specific individuals. As each person’s appearance holds its unique characteristics, an ad hoc procedure is extremely necessary for matching image pairs of arbitrary persons.

### Framework

Cross-view support factor learning

Cross-view projection factor learning

### Motivation

**Cross-view Support Consistency.** The colorful samples are selected by sparse coding method to represent the probe image (the gallery image), acting as the support set. Most of selected images are from same persons as the connected red samples demonstrate.

**Cross-view Support Consistency.** The probe image and k-nearest neighbors are obtained by Euclidean distance, as the colorful samples in the neighborhood indicate. The gallery image and images in Camera a are projected into virtual camera, and then k-nearest neighbors are obtained. Most of k-nearest neighbors samples are common as the dark red samples demonstrate.

### Experiments

Comparative results of different parameters on VIPeR

**Distribution of f**

**Comparing to the-state-of-the-art**