Domain Generalized Person Re-Identification via Cross-Domain Episodic Learning

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Introduction

- Domain Generalized Person Re-ID Multiple source-domain data are observed, with the goal of tackling re-ID tasks in unseen target domains.
- Contributions
- (1) Derive domain invariant yet identitydiscriminative features for re-ID.
- (2) Meta learning strategies allow derivation of domain-invariant latent representation with re-ID guarantees.



Method

• Meta Learning for Domain-Invariant Representation Episodic training strategy with pretrained domain specific feature extractors derive domain-invariant

representation.
Domain Generalized Person Re-ID Pull positive pairs together and push negative pairs away "crossly".



Experiments

Comparison

Our method performed favorably well and observed performance margins over the state-of-the-art methods on four benchmark target-domain datasets.

Target	GRID	i-LIDS	PRID	VIPeR	Avg.	Target	GRID	i-LIDS	PRID	VIPeR	Avg.
DIMN [19]	23.4	44.8	13.1	29.9	27.8	Baseline	18.8	52.5	14.8	32.0	29.5
DualNorm [16]	29.2	58.3	54.3	38.6	45.1	DANN [34]	29.0	57.2	56.8	37.8	45.2
Ours	33.0	62.3	57.6	38.5	47.8	Ours	33.0	62.3	57.6	38.5	47.8

Ablation Studies

Each introduced loss function is vital and beneficial to domain generalized person re-ID.

Target	GRID	i-LIDS	PRID	VIPeR	Avg.
Ours w/o \mathcal{L}_{tri}	31.3	59.0	55.8	37.3	45.8
Ours w/o \mathcal{L}_{consis}	30.6	60.3	55.7	40.1	46.7
Ours	33.0	62.3	57.6	38.5	47.8