

Deep Learning for Person Re-identification: A Survey and Outlook

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1 Re-ID 主要研究方向

2 经典工作

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2 经典工作

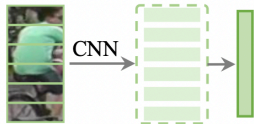
1. 数据采集
2. 行人框生成
3. 训练数据标注
4. 重识别模型训练
5. 行人检索

Closed-world (Section 2)	Open-world (Section 3)
✓ Single-modality Data	Heterogeneous Data (§ 3.1)
✓ Bounding Boxes Generation	Raw Images/Videos (§ 3.2)
✓ Sufficient Annotated Data	Unavailable/Limited Labels (§ 3.3)
✓ Correct Annotation	Noisy Annotation (§ 3.4)
✓ Query Exists in Gallery	Open-set (§ 3.5)

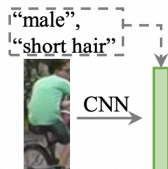
1. 特征学习
2. 度量学习
3. 排序优化



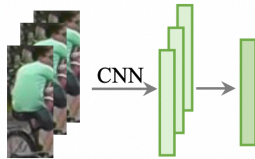
(a) Global



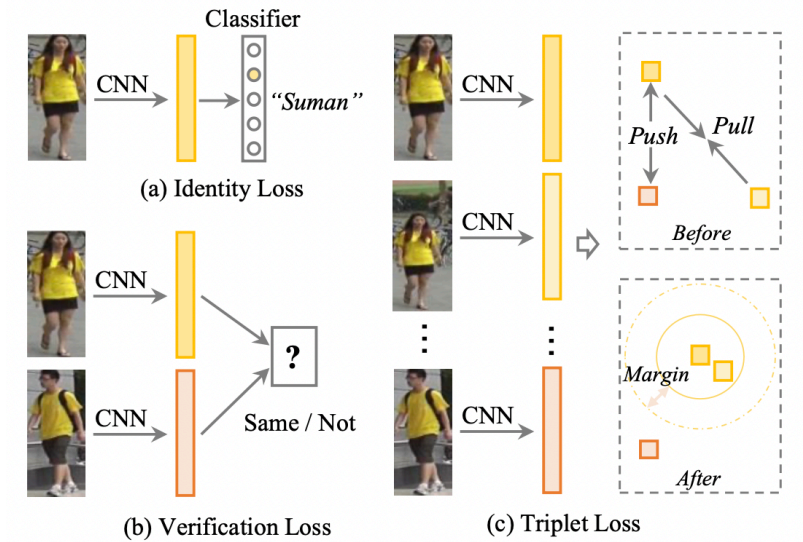
(b) Local

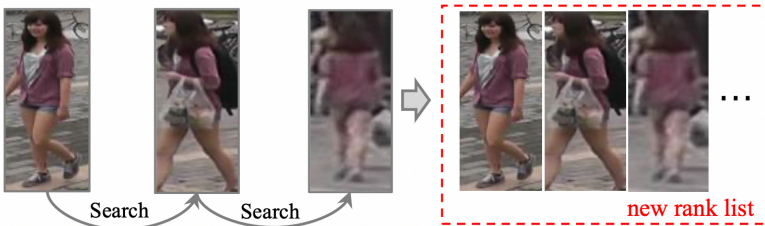
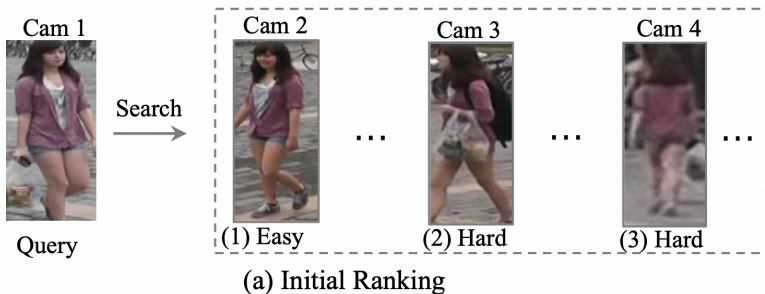


(c) Auxiliary



(d) Video





- 多模态数据
- 端到端的行人检索 (End-to-end Person Search)
- 无监督和半监督学习
- 噪声标注的数据
- 一些其他 Open-set 场景

① Re-ID 主要研究方向

② 经典工作

Beyond Part Models: Person Retrieval with Refined Part Pooling (and A Strong Convolutional Baseline)

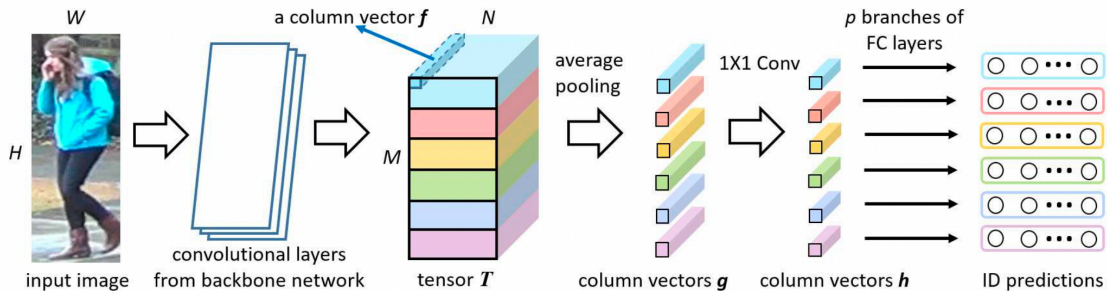
背景

1. 第一类是基于人体姿态估计的方法，这类方法的性能受限于姿态估计和 ReID 数据集的偏差，难以得到较好的语义分割；
2. 第二类不使用语义分割，不对部件进行定位。

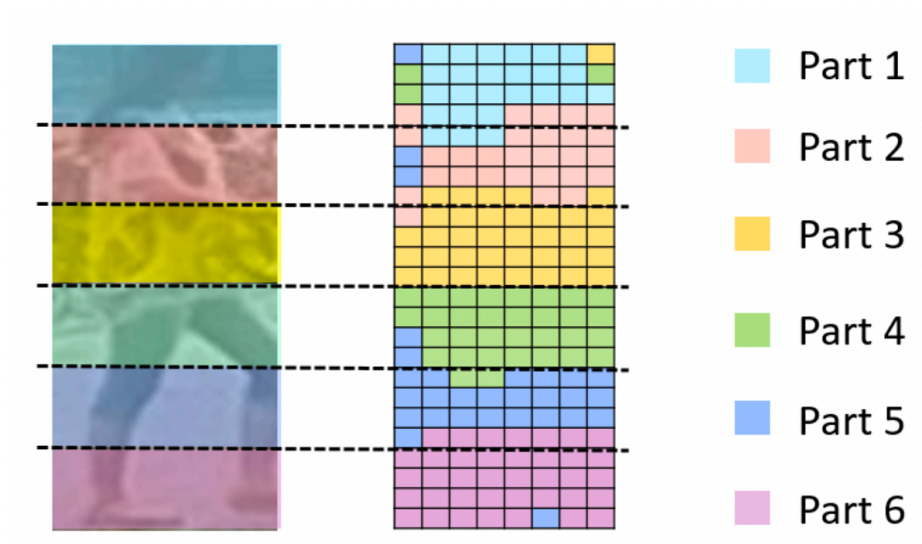
贡献

- 提出 PCB 网络，基于均匀划分的部分学习网络；
- 提出一种自适应的细化池化方法，refined part pooling (RPP)；

Part-based Convolutional Baseline (PCB)



Refined Part Pooling (RPP)



Models	Feature	dim	Market-1501		DukeMTMC-reID		CUHK03	
			R-1	mAP	R-1	mAP	R-1	mAP
IDE	pool5	2048	85.3	68.5	73.2	52.8	43.8	38.9
IDE	FC	256	83.8	67.7	72.4	51.6	43.3	38.3
Variant 1	\mathcal{G}	12288	86.7	69.4	73.9	53.2	43.6	38.8
Variant 1	\mathcal{H}	1536	85.6	68.3	72.8	52.5	44.1	39.1
Variant 2	\mathcal{G}	12288	91.2	75.0	80.2	62.8	52.6	45.8
Variant 2	\mathcal{H}	1536	91.0	75.3	80.0	62.6	54.0	47.2
PCB	\mathcal{G}	12288	92.3	77.4	81.7	66.1	59.7	53.2
PCB	\mathcal{H}	1536	92.4	77.3	81.9	65.3	61.3	54.2
PCB+RPP	\mathcal{G}	12288	93.8	81.6	83.3	69.2	62.8	56.7
PCB+RPP	\mathcal{H}	1536	93.1	81.0	82.9	68.5	63.7	57.5