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表征学习代码实践

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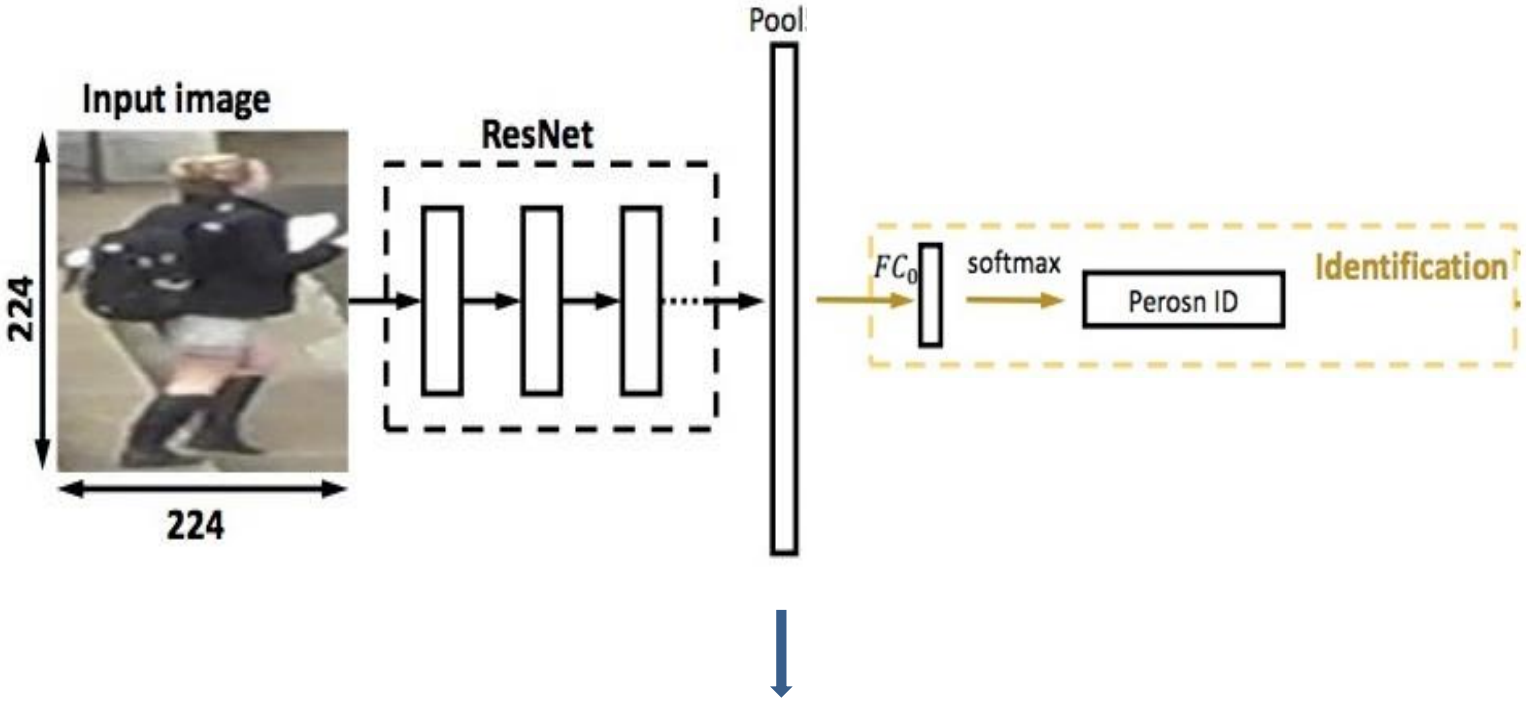
表征学习

IDENet



- 分类损失也叫ID损失，只有ID损失的网络称为ID Embedding网络（IDE网络）
- 训练集中行人的ID数为网络的类别数
- 特征层后接一个分类FC，经过Softmax激活函数计算交叉熵损失
- 测试阶段使用倒数第二层的特征向量进行检索，分类FC层丢弃
- 本次实践我们把图像大小改为256×128

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数据集准备

资源下载

- 下载Market1501数据集：http://www.liangzheng.org/Project/project_reid.html
- 代码下载：https://github.com/michuanhaohao/deep-person-reid

① "bounding_box_test". There are 19,732 images in this folder used for testing.
② "bounding_box_train". There are 12,936 images in this folder used for training.
③ "query". There are 750 identities. We randomly select one query image for each camera. So the maximum number of query images is 6 for an identity. In total, there are 3,368 query images in this folder.
④ "gt_query". This folder contains the ground truth annotations. For each query, the relevant images are marked as "good" or "junk". "junk" has zero impact on search accuracy. "junk" images also include those in the same camera with the query.
⑤ "gt_bbox". We also provide the hand-drawn bounding boxes. They are used to judge whether a DPM bounding box is good.

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环境准备

数据集准备

- 新建一个目录：mkdir reid
- 将数据集解压到reid/data下面：mkdir reid/data
- 然后解压并修改文件夹名字
- 解压后的目录应该为：

```
market1501/
    bounding_box_test/
    bounding_box_train/
    ...
```

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环境准备

Market1501

0001_c1s1_001051_00.jpg

- "0001" is the person ID
- "c1" is the first camera (there are totally 6 cameras)
- "s1" is sequence 1 of camera 1
- "001051" is the 1051th frame in the sequence
- "00" means that this bounding box is the first one among the several

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代码实现

主要代码

- data_manager.py：自动处理数据集，返回数据集的一些常用属性
- data_loader.py：吐数据的dataloader
- transform.py：数据预处理代码，可以自定义数据增广等
- model.py：提取特征的模型（ResNet50）
- train.py：主文件，包含训练、测试等代码
- utils.py：一些可能会用到的功能代码

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