Attentive Part-aware Networks for Partial Person Re-identification
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Background
- In actual scenes, there are serious occlusion problems in person re-identification task. Partial Re-ID derived from this.
  - Serious occlusion
  - Partial Re-ID

Challenges
- Partial Re-ID suffers from two major challenges
  1. There has large gap between the partial and holistic images.
  2. Incomplete probe image.

Our Method
- Problem1: The gap between partial testing data and holistic training data is large
  Solution1: Data augmentation
- Problem2: misalignment problem
  Solution2: we cropped the holistic image into the partial image: upper body, half body, missing half of the lower body, and missing half of the upper body.

Objective Function
- The triplet loss minimizes the distance between the anchor and a positive pair and maximizes the distance between the anchor and a negative pair. Here, a triplet of pictures is of the same cropping type.
- The loss is defined as,
  \[ L_{\text{triplet}} = L_{\text{ID}} + L_{\text{BAM}} + L_{\text{CTC}} \]

Experimental Results
- Examples of three dataset
- Experimental comparisons for partial re-id on the benchmark data sets.
- Evaluation of key components in the proposed framework.
- Evaluation of the impact of attention modules.

Contributions:
1. Data augmentation
2. Two attention module and CTC loss

Conclusions
- The CTC loss could help learn consistent partial features, which can be further enhanced by the BAM unit through attentive learning.
- The automatic data augmentation module to minimize the domain gap between the training and testing data.
- Extensive experiments conducted on Partial-REID and Partial-IIDS have confirmed that our approach could achieve very competitive performance compared with the state-of-the-art methods.