Rethinking Illumination for Person Re-Identification: A Unified View

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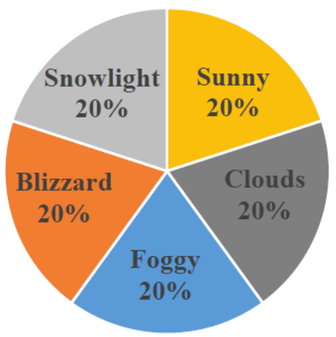
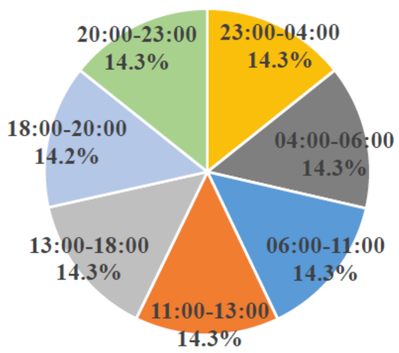
Motivation

Dissect person re-ID from the aspect of illumination

Datasets



(1) weather

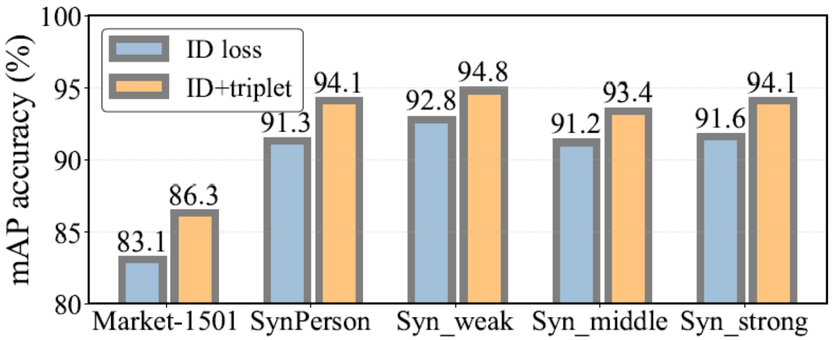


(2) illumination

Methods

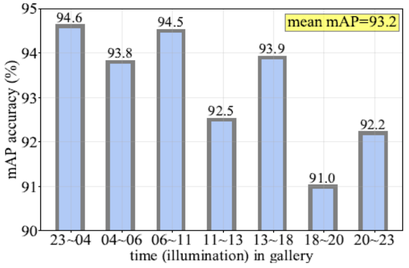
A Re-ID backbone with ID loss and Triplet loss

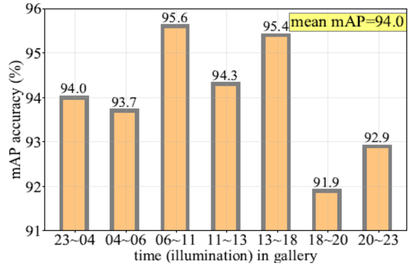
Benchmark Validation

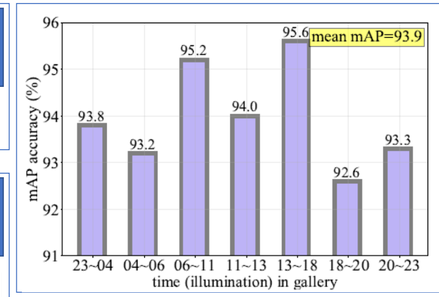


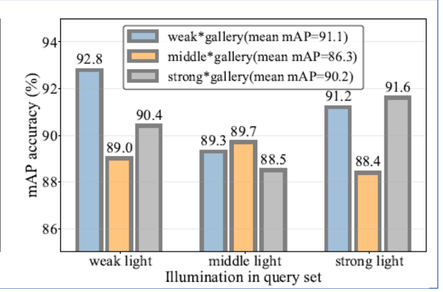
Evaluation

Experiment	Bboxes	Components			SynPerson		
		W	M	S	mAP	rank-1	rank-5
Group 1	43,930	✓			63.2	93.2	98.6
Group 2	43,930		✓		78.0	96.1	99.3
Group 3	43,930			✓	60.9	95.0	98.9
Group 4	43,930	✓	✓		90.3	97.4	99.5
Group 5	43,930	✓	✓	✓	93.8	98.5	99.8

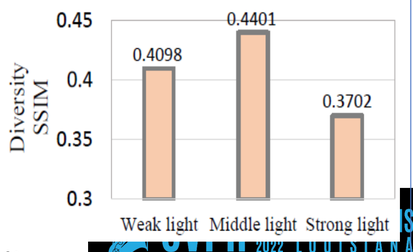








Discussion



Qualitative/quantitative studies on middle illumination

Conclusion

- We manually construct a large-scale synthetic dataset named SynPerson, which has diversified characters and distinguished attributes.
- Based on it, we conduct extensive experiments to quantitatively assess the influences of Illumination on re-ID accuracy, which help us take a closer look at fundamental problems in person re-ID.
- Further exploring the influences of these visual factors on other human-related tasks, such as pose estimation and human part segmentation.