Tilting at windmills: Data augmentation for deep pose estimation does not help with occlusion







Proposed occlusion augmentation



Blurring (P)



Multi keypoint Cutout



Cutout (K)



Blurring (K)









Rafał Pytel, Osman Semih Kayhan, Jan C. van Gemert



Keypoint augmentation

Augmentation	р	mAP
Baseline	-	65.3
Baseline (flip, rot, scale)	-	73.9
Baseline (flip, rot, scale, half body)	-	74.3
Blurring (K)	0.5	74.5
Cutout (K)	0.5	74.5



Part augmentation

Augmentation	р	mAP	
Baseline	-	65.3	
Baseline (flip, rot, scale)	-	73.9	
Baseline (flip, rot, scale, half body)	-	74.3	
Blurring (P)	0.5	74.1	
Cutout (P)	0.5	74.5	
PartMix	0.5	74.4	







PartMix



Conclusions

- 1. Head keypoints are most vulnerable for keypoint attacks.
- 2. Occlusion of parts with more keypoints produce higher loss.
- 3. Current and proposed methods do not bring significant improvement.
- 4. Person detectors influence results of top approaches, varying boost by down augmentation.