Supplementary Material

1. Full COCO metrics of FAPIS: Tab. 1 and Tab. 2 show the average over five runs of full COCO metrics of FAPIS on object detection and instance segmentation respectively.

# shots	Part	AP	AP_{50}	AP_{75}	AP_S	AP_M	AP_L	AR_1	AR_{10}	AR_{100}	AR_S	AR_M	AR_L
K=1	COCO-20^0	12.8	20.9	13.2	8.7	13.9	18.8	11.9	28.1	38.8	24.0	41.7	51.9
	COCO-20^1	12.0	20.4	12.3	6.9	14.1	17.2	12.3	31.5	44.6	31.2	51.3	59.7
	COCO-20^2	11.6	20.0	11.7	9.0	10.7	19.1	10.9	28.8	42.9	31.7	46.6	57.6
	COCO-20^3	15.1	23.4	15.9	10.5	13.7	19.1	14.4	33.7	46.1	32.4	49.8	59.5
K=5	COCO-20^0	14.1	22.6	14.6	8.3	14.8	22.0	13.2	28.9	39.4	24.5	41.9	54.0
	COCO-20^1	13.4	22.8	13.7	7.1	15.9	19.6	13.8	33.1	45.8	33.1	53.8	61.0
	COCO-20^2	13.0	22.6	13.4	9.6	13.0	21.2	12.0	31.0	43.9	33.3	47.6	59.1
	COCO-20^3	16.9	26.4	18.0	11.3	15.3	23.8	15.2	35.0	47.3	33.1	51.4	61.7

Table 1. Object detection results of FAPIS on full COCO metrics

# shots	Part	AP	AP_{50}	AP_{75}	AP_S	AP_M	AP_L	AR_1	AR_{10}	AR_{100}	AR_S	AR_M	AR_L
K=1	COCO-20^0	10.2	18.8	10.1	5.7	9.7	18.0	9.8	23.3	31.4	18.9	33.6	42.8
	COCO-20^1	8.9	17.7	8.0	3.8	10.4	15.7	10.1	26.0	36.7	23.0	44.2	50.6
	COCO-20^2	9.8	18.2	9.7	4.3	8.9	18.3	10.5	24.8	35.9	26.2	39.6	48.7
	COCO-20^3	12.5	21.4	13.3	7.1	11.4	19.2	12.6	28.3	37.4	22.9	41.4	52.8
K=5	COCO-20^0	11.3	20.2	10.9	5.0	10.5	20.8	10.9	24.0	32.1	18.9	33.9	45.8
	COCO-20^1	10.3	20.0	9.4	3.8	11.9	19.0	11.2	27.6	38.4	24.4	46.0	54.7
	COCO-20^2	11.4	20.4	12.1	6.5	10.6	20.4	11.3	25.5	35.5	24.4	39.3	47.9
	COCO-20^3	14.3	24.3	15.0	7.5	13.3	22.9	13.5	30.1	39.6	24.8	43.8	54.3

Table 2. Instance segmentation results of FAPIS on full COCO metrics

2. Further qualitative results: We show more qualitative results on COCO-$20^i, i = 1..3$ in Fig. 1, Fig. 2, Fig. 3, respectively. For each pair of images, the small one is the support and the large one is the query. Each instance segmentation result is marked with a different color in the query. The green border indicates success cases, and the red border marks failure cases. FAPIS typically fails when instances in the support image are very different in appearance, shape, or 3D pose from instances in the query. Best viewed in color.

Figure 1. Our one-shot instance segmentation on COCO-20^1.

Figure 2. Our one-shot instance segmentation on COCO-20^2.

Figure 3. Our one-shot instance segmentation on COCO-20^3.

3. Visualization of 16 latent parts: We show visualization of learned parts and their weights contributing to the final masks from COCO-20^0 validation set in Fig. 4.

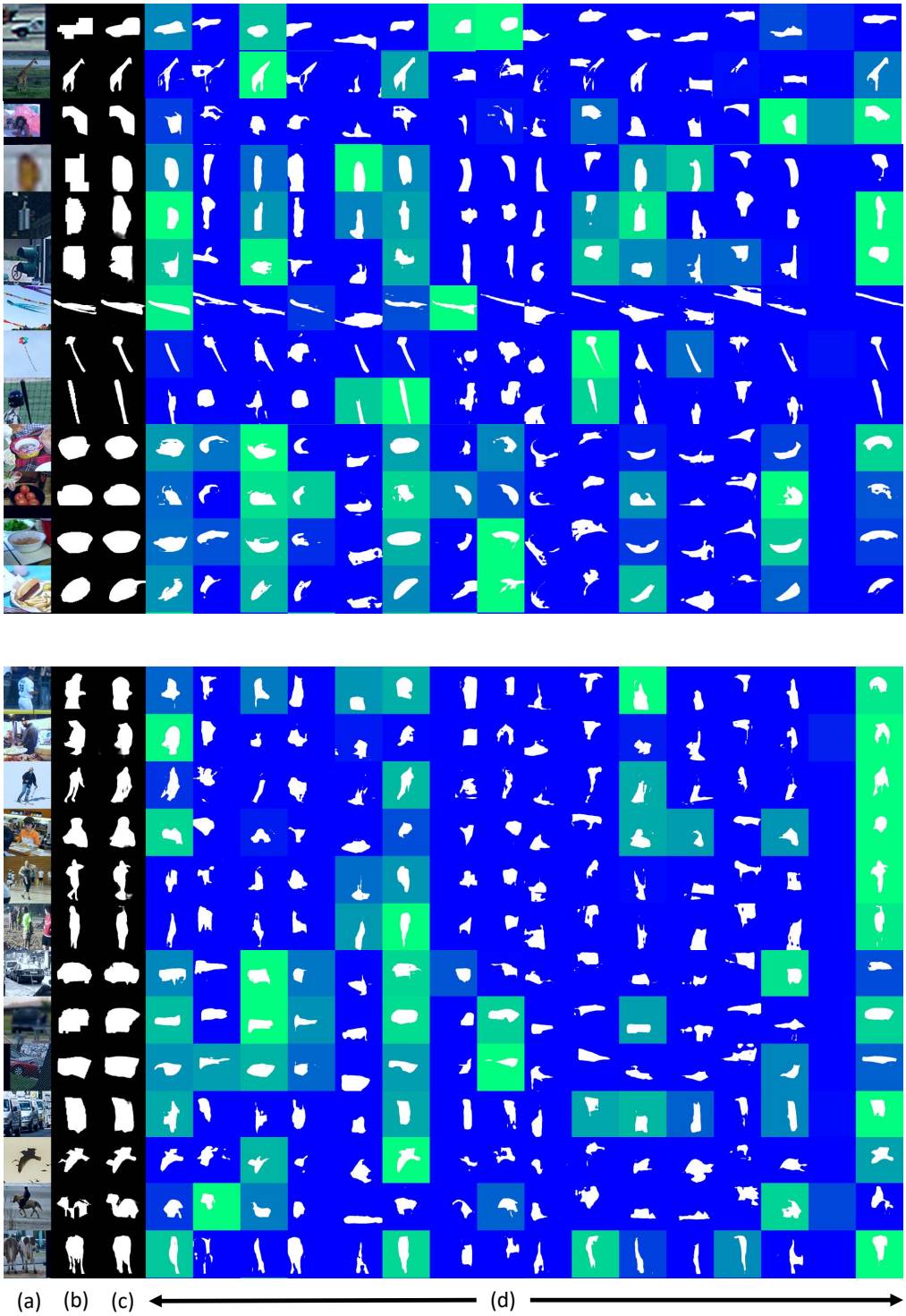

Figure 4. Visualization of 16 latent parts for both training (upper) and test (lower) classes from COCO-20^0 validation set. From left to right: (a) input image, (b) GT segmentation, (c) predicted segmentation, (d) 16 predicted object parts. The predicted importance of the parts is color-coded from blue (smallest) to green (largest).