

## Quantitative Result on ImageNet Dataset

	FSGM		PGD		BIM		DeepFool		C&W		NewtonFool	BPDA
	$2/255 \uparrow$	$4/255 \uparrow$	$2/255 \uparrow$	$4/255 \uparrow$	$2/255 \uparrow$	$4/255 \uparrow$	$L_\infty \uparrow$	$L_2 \uparrow$	$L_\infty \uparrow$	$L_2 \uparrow$	$L_\infty \uparrow$	$L_\infty \uparrow$
<b>ResNet-101</b>												
JPEG-Defense [20]	33.14	20.71	45.19	21.74	36.78	8.5	53.16	45.69	59.06	52.01	24.65	0.08
TVM [27]	43.75	40.02	45.46	44.35	44.86	41.93	47.69	39.89	45.51	40.44	22.6	6.39
Randomized Resizing & Padding [84]	45.21	34.97	45.38	27.75	40.04	18.04	73.06	62.47	66.53	59.87	27.93	2.66
HGD [47]	54.75	43.85	55.26	50.05	56.74	48.61	64.34	58.13	59.98	52.88	27.70	0.03
Pixel-Deflection [64]	54.56	35.14	60.68	34.86	58.71	41.91	<b>75.97</b>	<b>64.13</b>	66.29	60.91	28.81	1.87
ComDefend [38]	48.21	36.51	53.28	48.38	51.39	42.01	63.68	55.62	58.53	50.38	26.46	0.03
Proposed Method	<b>66.02</b>	<b>58.85</b>	<b>68.34</b>	<b>66.17</b>	<b>66.91</b>	<b>63.01</b>	72.04	63.52	<b>71.40</b>	<b>67.33</b>	<b>40.96</b>	<b>38.85</b>
<b>InceptionV3</b>												
JPEG-Defense [20]	31.97	20.25	43.34	21.15	34.68	8.55	51.20	43.49	55.00	50.39	24.06	0.12
TVM [27]	42.47	37.23	42.75	41.61	42.80	39.71	45.21	37.39	43.27	37.51	23.05	4.58
Randomized Resizing & Padding [84]	41.86	34.49	43.41	25.60	39.42	16.62	70.24	58.65	63.24	55.62	27.55	2.09
HGD [47]	52.83	40.99	50.35	47.62	56.02	47.78	60.33	56.61	59.55	52.0	26.84	0.03
Pixel-Deflection [64]	51.42	34.27	56.13	32.49	56.18	39.13	<b>71.16</b>	<b>61.58</b>	61.94	57.58	28.01	1.56
ComDefend [38]	47.00	35.34	49.99	46.15	48.74	39.58	60.01	52.47	55.85	47.70	25.44	0.03
Proposed Method	<b>63.03</b>	<b>56.34</b>	<b>65.69</b>	<b>63.03</b>	<b>64.77</b>	<b>59.49</b>	69.25	60.04	<b>66.97</b>	<b>64.69</b>	<b>38.01</b>	<b>36.43</b>

## Quantitative Result on COCO Dataset

	FSGM		PGD		BIM		DAG	
	$L_\infty = 2/255 \uparrow$	$L_\infty = 4/255 \uparrow$	$L_\infty = 2/255 \uparrow$	$L_\infty = 4/255 \uparrow$	$L_\infty = 2/255 \uparrow$	$L_\infty = 4/255 \uparrow$	$L_\infty = 2/255 \uparrow$	$L_\infty = 4/255 \uparrow$
JPEG-Defense [20]	37.41	32.27	24.53	6.21	25.74	10.18	14.12	5.66
TVM [27] [27]	42.64	41.53	45.55	42.24	44.51	38.44	31.88	25.56
HGD [47]	43.39	40.82	44.54	40.88	40.03	39.95	28.61	22.36
Pixel-Deflection [64]	44.13	41.88	46.38	42.32	44.78	37.22	30.73	24.61
ComDefend [38]	45.57	39.23	44.85	41.14	42.71	36.12	28.94	23.36
Proposed Method	<b>52.35</b>	<b>48.04</b>	<b>53.41</b>	<b>49.59</b>	<b>54.86</b>	<b>50.51</b>	<b>40.35</b>	<b>37.88</b>

## Quantitative Result on Pascal VOC Dataset

	FSGM		PGD		BIM		DAG	
	$L_\infty = 2/255 \uparrow$	$L_\infty = 4/255 \uparrow$	$L_\infty = 2/255 \uparrow$	$L_\infty = 4/255 \uparrow$	$L_\infty = 2/255 \uparrow$	$L_\infty = 4/255 \uparrow$	$L_\infty = 2/255 \uparrow$	$L_\infty = 4/255 \uparrow$
JPEG-Defense [20]	39.02	35.88	37.96	33.51	38.85	34.69	30.72	25.07
TVM [27]	48.11	39.66	47.1	44.38	48.94	41.76	39.20	33.18
HGD [47]	50.68	40.06	51.24	45.92	46.80	39.74	41.15	37.23
Pixel-Deflection [64]	53.77	44.82	54.45	47.22	55.32	48.32	46.52	39.87
ComDefend [38]	50.18	42.93	50.46	43.08	52.32	44.2	44.68	37.22
Proposed Method	<b>61.68</b>	<b>59.37</b>	<b>64.71</b>	<b>60.23</b>	<b>66.52</b>	<b>61.82</b>	<b>57.83</b>	<b>54.12</b>