A APPENDIX

Table 6: Results from tests on Adv.{RR, RPD, RPS, AR, APD, APS} according to the experimental sets in Table 3. Every four rows in the data correspond to a group of experiments. According to adversarial attack iteration, it is divided into three groups in 9 columns, representing 1, 50, 100 respectively. The bold parts in the table indicate the attack success rate corresponding to different L_∞ constraints under the same Adv Iter and the same Case.

| | | Adv Iter = 1 | | | Adv Iter = 50 | | | Adv Iter = 100 | | |
		10	20	30	10	20	30	10	20	30
Adv.RR	Case I	88.18	88.18	**90.15**	93.60	94.09	**95.57**	94.09	95.57	**96.06**
	Case II	83.74	83.74	**84.73**	92.61	92.61	**93.10**	93.10	93.10	**94.09**
	Case III	**56.16**	54.68	49.26	**76.35**	72.41	75.37	76.85	74.88	**76.35**
	Case IV	**55.17**	52.71	47.78	**76.35**	69.95	69.46	**76.35**	71.92	70.44
Adv.RPD	Case I	87.62	89.16	**89.66**	93.07	**96.06**	95.57	93.56	**96.55**	95.57
	Case II	83.17	**84.24**	82.76	91.58	**93.60**	93.10	92.08	**94.09**	93.60
	Case III	**62.87**	51.72	52.22	**77.23**	73.40	71.92	**77.72**	75.37	74.88
	Case IV	**61.88**	50.25	50.25	**75.74**	69.95	69.46	**76.24**	72.41	71.92
Adv.RPS	Case I	87.68	**89.66**	88.18	93.10	94.58	**95.07**	94.09	**96.06**	95.57
	Case II	83.74	**85.22**	82.76	91.63	92.61	**93.10**	93.10	**94.09**	**94.09**
	Case III	**57.64**	55.17	49.26	**74.38**	71.92	73.89	76.35	74.38	**76.85**
	Case IV	**56.65**	52.71	47.78	**73.89**	70.44	70.44	**74.88**	71.92	72.91
Adv.AR	Case I	87.68	88.67	**89.16**	92.61	**96.06**	94.58	93.10	**97.04**	96.06
	Case II	**84.24**	82.76	83.25	91.13	**93.60**	92.61	91.63	**94.58**	94.09
	Case III	**58.62**	50.25	50.25	**74.38**	73.89	73.89	74.38	74.88	**76.35**
	Case IV	**56.65**	47.78	49.26	**72.91**	71.92	69.95	**72.91**	**72.91**	71.92
Adv.APD	Case I	87.19	**89.16**	88.67	91.63	95.07	**95.57**	93.60	95.07	**95.57**
	Case II	**83.25**	**83.25**	82.76	90.15	**93.60**	93.10	92.61	**93.60**	93.10
	Case III	**59.11**	52.71	48.28	**74.88**	73.40	74.38	76.35	**76.85**	74.88
	Case IV	**57.64**	50.25	45.81	**73.89**	70.44	69.95	**75.37**	72.41	70.94
Adv.APS	Case I	86.70	88.67	**91.13**	92.61	**95.07**	**95.07**	92.61	**96.06**	**96.06**
	Case II	81.77	83.25	**84.24**	90.64	92.61	**93.10**	90.64	94.09	**94.58**
	Case III	**55.67**	51.72	50.74	**75.37**	74.38	72.91	75.86	**75.86**	74.88
	Case IV	**54.19**	49.26	48.77	**74.88**	69.95	68.47	**75.37**	70.94	69.95

Table 7: Ablation study results, with $L_\infty \le 10$ as the constraint. Each row in the table represents the results of the adversarial attack iteration from 10 to 100 under the same Adv.setting. The bolded parts are the items with the highest attack success rate among different Adv. at the same adversarial attack iteration.

|	1	10	20	30	40	50	60	70	80	90	100
Adv.RR	18.67	45.57	52.85	56.33	60.13	62.66	62.97	63.92	64.56	64.87	65.19
Adv.RPD	**19.62**	**46.20**	**54.43**	**57.28**	59.18	60.44	62.66	63.92	64.24	64.24	65.51
Adv.RPS	17.72	42.41	51.58	56.33	58.23	58.86	61.08	62.66	63.92	65.19	66.46
Adv.AR	17.09	40.51	47.78	54.75	**61.08**	**62.66**	**64.56**	**65.19**	**65.82**	66.14	66.14
Adv.APD	18.67	45.25	52.53	56.33	58.54	59.49	62.03	64.56	64.87	**66.46**	**67.41**
Adv.APS	18.35	42.72	49.68	52.53	56.33	59.18	60.44	62.34	62.97	63.61	65.82
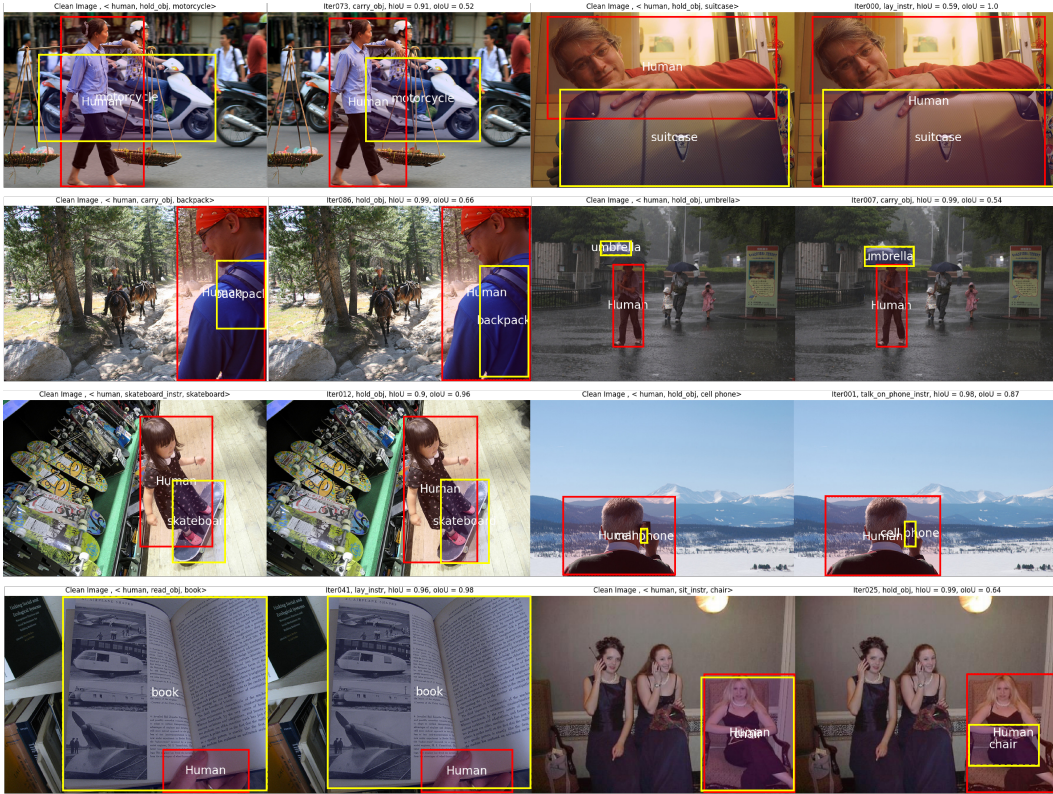
Figure 3: Here is the visualization of the attack results. Each group comprises two images: the clean image on the left and the adversarial image on the right. The title of each image includes the original prediction result, the IoU before and after the attack, and the interaction after the attack.
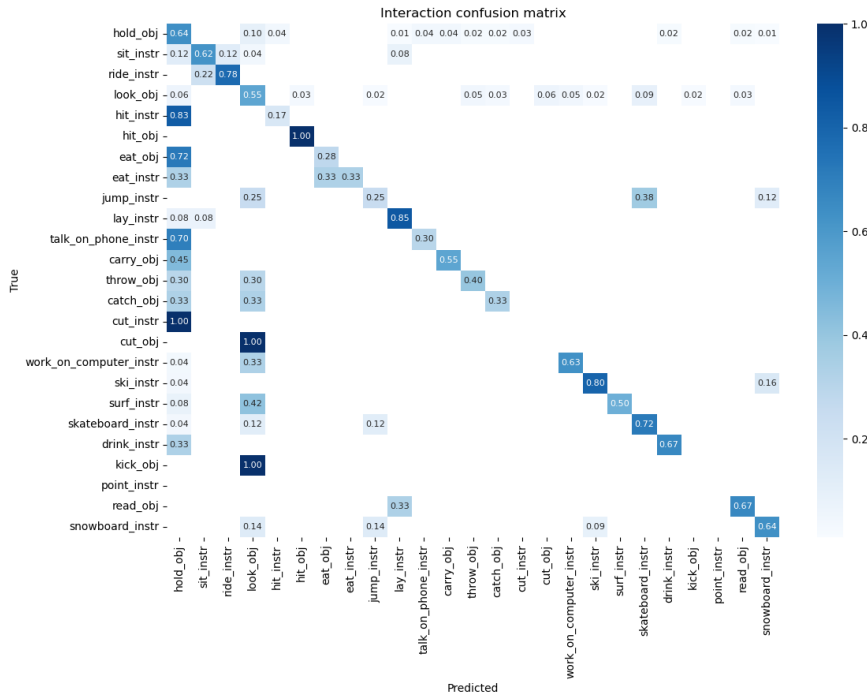

Figure 4: The confusion matrix analysis for interactions. The vertical axis represents the original interactions, while the horizontal axis represents the predicted interactions.

Figure 5: The frequency of occurrence on objects after misidentifying different interactions.