

# Supplementary File

Table S1 Comparison of Methods in Grasping and Throwing into New Position

	GSR		TSR		CR	
	Mean	Std	Mean	Std	Mean	Std
RPGT	75.0%	5.0%	64.4%	5.5%	48.3%	2.9%
G-IPE	68.3%	2.9%	63.4%	7.3%	43.3%	5.8%
G-LTR	71.7%	5.8%	65.1%	7.3%	46.7%	7.6%
CGTL <sup>-</sup>	75.0%	5.0%	68.9%	9.7%	51.7%	5.0%
CGTL-I	78.3%	2.9%	76.6%	9.1%	60.0%	5.0%
CGTL	<b>81.7%</b>	5.8%	<b>77.6%</b>	8.1%	<b>63.3%</b>	2.9%

Table S2 Ablation Study of CGTL

	$v_r$	$m$	$Q_t$	GSR	TSR	CR
CGTL(1)				76.7%	67.4%	51.7%
CGTL(2)	✓			78.3%	76.6%	60.0%
CGTL(3)	✓	✓		80.0%	83.3%	66.7%
CGTL(4)	✓		✓	80.0%	77.1%	61.7%
CGTL	✓	✓	✓	<b>85.0%</b>	<b>84.3%</b>	<b>71.7%</b>

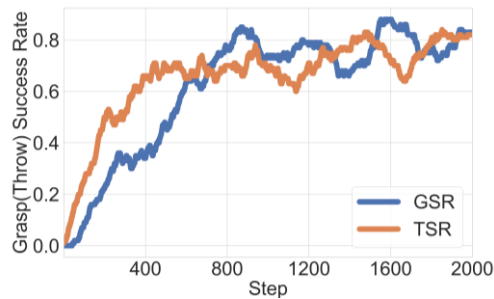


Fig S1. The training process of grasp and throw agents.

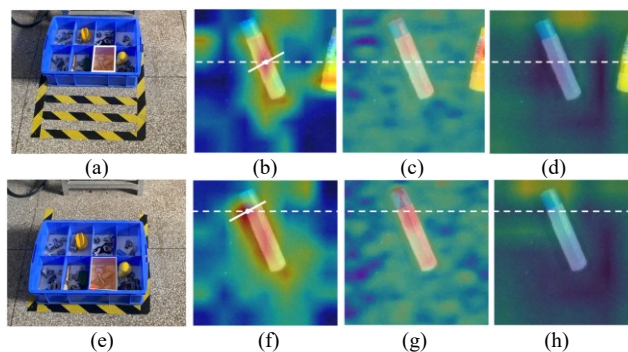


Fig. S2. Grasp affordances, ARC-map, and throwing compensation velocity map generated by our CGTL in throwing stick-shaped to a farther position. (a) and (e) show a near and a far position. The second, third, and fourth columns show the grasp affordances, ARC-map, and throwing compensation velocity map generated by our CGTL, respectively.