

		MSCOCO				
Model	Measure	Beam size	Layers	BLEU	METEOR	TER
Seq-to-Seq	-	10	2	16.5	15.4	67.1
With Attention	-	10	2	18.6	16.8	63.0
Seq-toSeq	-	10	4	28.9	23.2	56.3
Bi-directional	-	10	4	32.8	24.9	53.7
With Attention	-	10	4	33.4	25.2	53.8
Residual LSTM	-	10	4	37.0	27.0	51.6
Unsupervised	-	No beam	1, 2	12.8	17.5	78.8
VAE-S	Avg	No beam	1, 2	7.0	14.0	82.3
	best BLEU	No beam	1, 2	11.3	16.8	76.5
	best METEOR	No beam	1, 2	11.0	17.7	78.8
VAE-SVG (our)	Avg	No beam	1, 2	39.2	29.2	43.6
	best BLEU	No beam	1, 2	41.1	30.3	42.3
	best METEOR	No beam	1, 2	41.7	30.8	41.7
	Avg	10	1, 2	41.3	30.9	40.8
	best BLEU	10	1, 2	40.9	30.7	42.0
	best METEOR	10	1, 2	41.3	31.0	41.6
VAE-SVG-eq (our)	Avg	No beam	1, 2	37.3	28.5	45.1
	best BLEU	No beam	1, 2	39.2	29.5	43.9
	best METEOR	No beam	1, 2	39.8	30.0	43.4
	Avg	10	1, 2	39.6	30.2	42.3
	best BLEU	10	1, 2	39.3	30.1	43.5
	best METEOR	10	1, 2	39.7	30.4	43.2