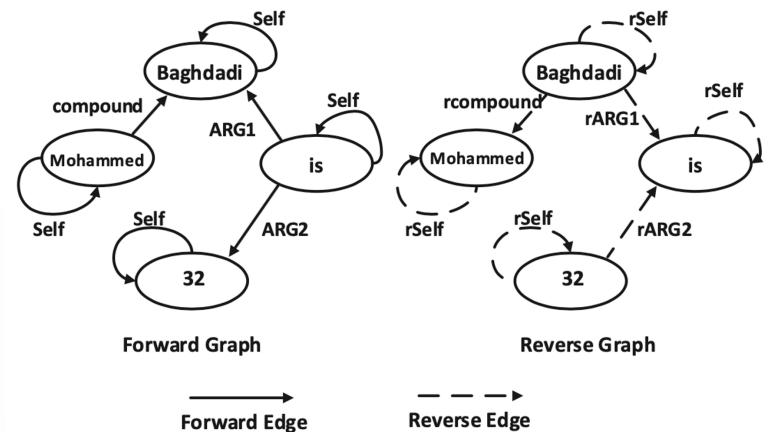


SDP Graph



Graph Encoder

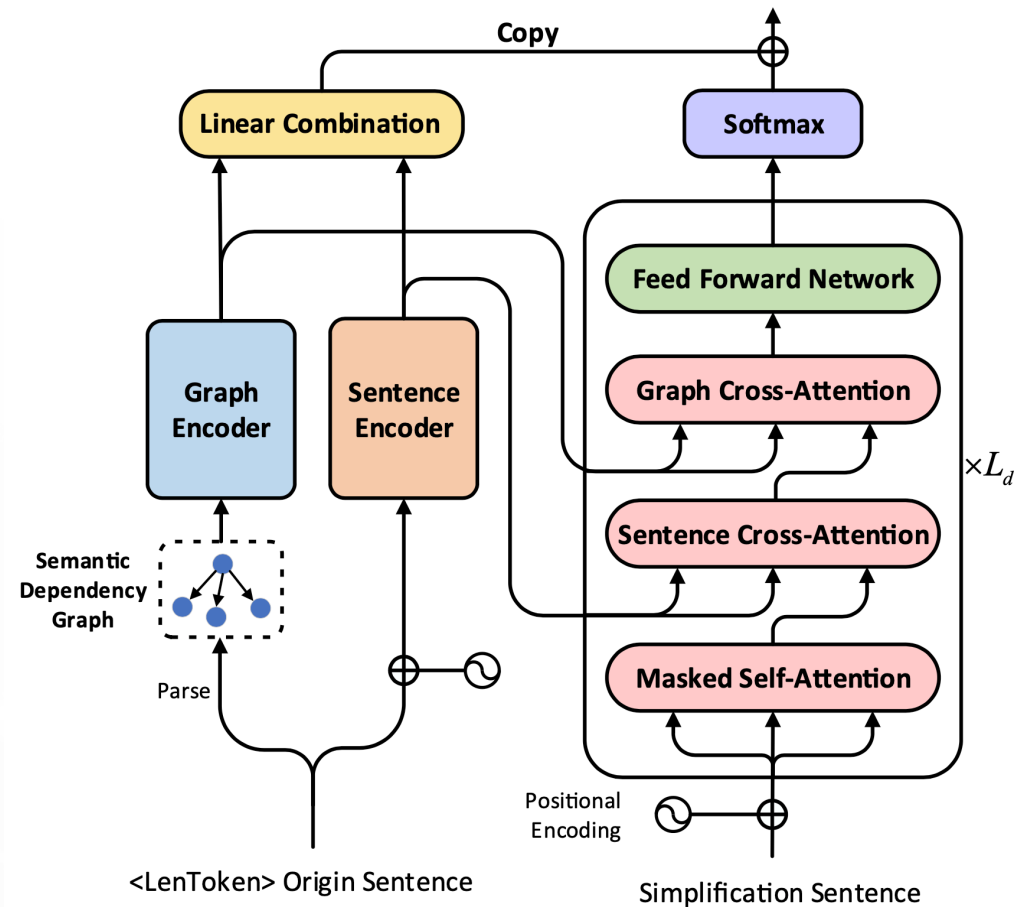
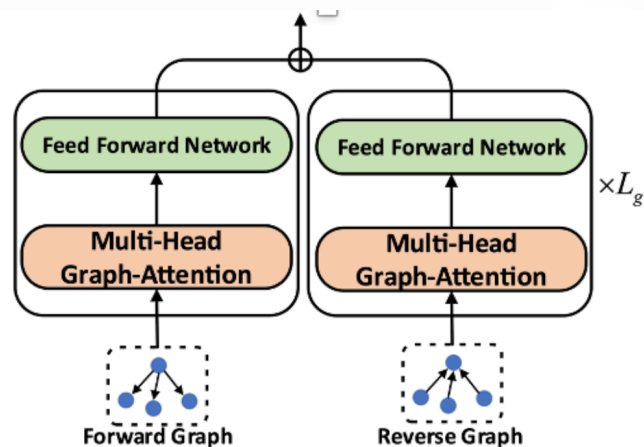


Figure 1: An overview of SDISS, which consists of sentence encoder, graph encoder and sentence decoder.

Results

WikiLarge	BLEU	SARI ↑	FKGL ↓	% unc.
Reference	-	-	8.88	15.88
PBMT-R	81.81	38.56	8.33	10.58
Hybrid	48.97	31.40	4.57	36.21
Transformer	84.27	35.34	7.92	23.08
DRESS	77.18	37.08	6.59	22.28
DRESS-Ls	80.12	37.27	6.62	27.02
N _{SE} L _{STM} -S	80.43	36.88	-	-
N _{SE} L _{STM} -B	92.02	33.43	-	-
EditNTS	86.68	38.22	7.30	10.86
SDISS(ours)	77.36	38.66	7.07	13.37
Models with external human knowledge				
SBMT-SARI	73.08	39.96	7.29	9.47
DMASS+DCSS	80.53	40.45	7.79	6.69

WikiSmall	BLEU	SARI ↑	FKGL ↓	% unc.
Reference	-	-	8.86	3.00
PBMT-R	46.31	15.97	11.42	14.00
Hybrid	53.94	30.46	9.20	4.00
Transformer	49.85	27.92	8.00	15.03
DRESS	34.53	27.48	7.48	11.00
DRESS-Ls	36.32	27.24	7.55	13.00
N _{SE} L _{STM} -S	29.72	29.75	-	-
N _{SE} L _{STM} -B	53.42	17.47	-	-
EditNTS	23.87	32.35	5.47	0.00
SDISS(ours)	24.25	34.06	4.58	0.00

Newsela	BLEU	SARI ↑	FKGL ↓	% unc.
Reference	-	-	3.20	0.00
PBMT-R	18.19	15.77	7.59	5.85
Hybrid	14.46	30.00	4.01	3.34
Transformer	27.89	29.32	3.97	9.71
DRESS	23.21	27.37	4.11	11.98
DRESS-Ls	24.30	26.63	4.20	15.51
N _{SE} L _{STM} -S	22.62	29.58	-	-
N _{SE} L _{STM} -B	26.31	27.42	-	-
EditNTS	19.85	31.41	3.40	4.27
SDISS(ours)	18.81	32.30	2.38	5.01

Human Evaluation

	Newsela				WikiSmall				WikiLarge			
	F	A	S	avg.	F	A	S	avg.	F	A	S	avg.
Reference	4.29	2.84	3.73	3.62	4.28	3.78	3.24	3.77	4.26	4.09	2.62	3.65
PBMT-R	3.68	3.64	2.12	3.15	4.10	4.04	2.20	3.45	4.09	3.92	2.43	3.48
SBMT-SARI	-	-	-	-	-	-	-	-	4.03	3.72	2.52	3.42
DMASS+DCSS	-	-	-	-	-	-	-	-	4.12	3.75	2.76	3.54
Hybrid	2.98	2.62	2.74	2.78	3.41	3.64	2.50	3.18	2.93	2.66	3.68	3.09
DRESS	3.93	2.95	3.01	3.30	4.29	3.42	3.54	3.75	4.30	3.65	3.32	3.76
Transformer	3.81	2.72	3.04	3.19	4.25	3.62	2.43	3.43	4.32	3.97	1.89	3.39
EditNTS	3.98	3.02	3.23	3.41	4.09	3.12	3.94	3.72	4.40	4.03	2.98	3.80
SDISS(ours)	3.82	3.23	3.32	3.46	4.12	3.67	3.85	3.88	4.62	4.13	3.23	3.99

