Recent Multi-Modal MT Results (Sulubacak et al., 2019)

	BLEU ↑	METEOR ↑	Type	Description	Arch.
Elliott et al (2015) †	9.7 (N/A)	24.7 (N/A)	E,D	Conditional LMs	RNN
Caglayan et al (2016a) †	29.3 (↓4.6)	48.5 (↓4.3)	A	Shared Attention	RNN
Calixto et al (2016) †	28.8 (N/A)	49.6 (N/A)	A	Separate Attention	RNN
Huang et al (2016) †	36.8 (↑2.0)	54.4 (↑2.3)	IF	Parallel RCNN-LSTMs	RNN
Hitschler et al (2016) †	34.3 (N/A)	56.0 (N/A)	R	Retrieval + Reranking	SMT
Toyama et al (2016)	36.5 (↑1.6)	56.0 (↑0.7)	L	Variational	RNN
Shah et al (2016) †	34.8 (↑0.2)	56.7 (↑0.1)	R	Visual Reranking	SMT
Caglayan et al (2016a) †	36.2 (− 0.0)	57.5 (↑0.1)	R	Visual Reranking	SMT
Helcl and Libovicky (2017)	31.9 (↓2.7)	49.4 (↓2.3)	A	Hierarchical Attention	RNN
Calixto and Liu (2017)	36.9 (↑3.2)	54.3 (↑2.0)	I	Input Prepend & Append	RNN
Calixto et al (2017)	36.5 (↑2.8)	55.0 (↑2.7)	A	Gated Attention	RNN
Calixto and Liu (2017)	37.3 (↑3.6)	55.1 (↑2.8)	D	Decoder Init.	RNN
Elliott and Kádár (2017)	36.8 (↑1.3)	55.8 (↑1.8)	T	Imagination	RNN
Caglayan et al (2017a)	38.2 (↑0.1)	57.6 (↑0.3)	E,D	Encoder Decoder Init.	RNN
	37.8 (↓0.3)	57.7 (↑0.4)	O	Multiplicative Interaction	RNN
Delbrouck and Dupont (2017b)	40.5 (N/A)	57.9 (N/A)	A	Encoder Attention + CBN	RNN
Arslan et al (2018)	41.0 (↑2.4)	53.5 (↓1.5)	A	Parallel Attention	Transformer
Calixto et al (2018)	37.6 (↑2.6)	56.0 (↑1.1)	L	Variational	RNN
Helcl et al (2018b)	38.8 (↑0.7)	56.4 (↑0.2)	T	Imagination	Transformer
Libovicky et al (2018)	38.5 (↑0.2)	56.5 (↓0.2)	A	Hierarchical Attention	Transformer
	38.6 (↑0.3)	57.4 (↑0.7)	A	Parallel Attention	RNN
Ive et al (2019)	38.0 (↑0.1)	55.6 (↓0.3)	DF	2-stage Decoder + Label Embs.	Transformer
Libovicky (2019)	37.6 (↑0.9)	56.0 (↑0.9)	A	Hierarchical Attention	RNN
Caglayan (2019)	39.0 (↑0.1)	58.5 (↑0.1)	E,D	Encoder Decoder Init.	RNN
	39.4 (↑0.5)	58.7 (↑0.3)	A	Separate Attention + L2 Norm.	RNN
Unconstrained ensembles					
Helcl et al (2018b)	42.6 (↑2.2)	59.4 (↑0.4)	T	Imagination	Transformer
Grönroos et al (2018)	45.5 (− 0.0)	(N/A)	IF	Input Prepend	Transformer