

Src/Tgr	ar	bg	bs	cs	da	de	el	en	eo	es	fr-fr	ca	gl	he	hr	hu	id	it	ja	ko	mk	nb	nl	pl	pt-pt	br	ro	ru	sk	sl	sr	sv	tr	uk	vizh-cnzh	tw	
ar		4.9	1.8	3.0	4.5	3.8	6.7	20.3	4.1	13.2	12.2	9.0	5.6	3.5	2.2	2.7	9.2	9.9	4.2	5.3	5.5	4.9	4.4	3.0	12.0	12.2	5.6	5.6	1.5	2.7	1.2	4.0	2.4	4.5	12.3	8.2	4.9
bg	3.0		4.2	6.7	8.7	8.5	10.0	25.3	7.7	16.3	14.7	11.9	8.4	3.2	6.4	4.7	10.3	12.2	4.0	5.4	16.2	8.1	7.7	6.3	14.7	15.4	9.8	12.4	4.0	6.4	2.7	7.1	2.4	10.4	11.7	6.4	4.7
bs	1.2	6.1		4.1	3.7	5.8	4.5	21.7		9.9	6.7	4.6	5.7	1.0	30.9	2.4	5.3	6.5	1.4		12.9		3.8	2.9	9.9	10.9	5.7	4.8	3.1	10.4	10.6	4.4	1.5	5.4	5.8	2.8	1.8
cs	1.9	7.8	3.7		7.1	8.3	6.4	20.0	10.4	12.6	11.4	8.6	5.0	2.5	6.5	4.9	7.8	9.6	4.1	5.5	5.0	6.3	7.6	8.1	10.8	12.1	6.3	9.4	28.1	6.7	1.6	7.0	2.6	7.8	9.0	6.6	4.7
da	2.0	8.9	4.0	5.2		14.0	9.0	32.9	6.7	16.7	16.7	12.8	7.3	3.5	4.4	4.7	10.8	13.4	4.7	6.0	6.2	33.1	12.4	4.8	14.0	16.2	8.5	7.8	3.1	5.2	1.4	25.8	2.7	6.3	11.2	7.3	4.9
de	2.4	9.7	4.9	8.1	16.9		7.8	24.5	15.9	17.4	18.3	14.7	6.8	4.3	5.5	7.2	8.6	13.5	6.4	6.6	5.6	11.5	17.6	6.8	14.2	15.2	8.7	9.2	5.4	8.6	1.5	12.7	3.6	7.8	11.3	9.2	4.3
el	4.1	11.2	4.8	5.5	9.7	6.7		27.9	8.0	18.8	16.3	13.5	10.1	4.0	5.6	5.3	13.1	15.3	5.5	6.1	10.2	9.3	8.7	5.1	18.0	18.3	10.4	8.4	3.1	6.4	2.0	7.2	3.4	7.2	14.4	8.7	5.3
en	11.9	23.9	14.7	15.5	30.9	20.4	27.1		22.6	35.8	32.6	25.1	24.3	17.3	18.8	13.5	28.8	29.5	10.2	18.6	21.8	31.8	25.1	12.0	31.4	37.0	20.4	17.4	13.8	16.5	5.5	29.1	10.3	17.6	26.9	18.0	10.7
eo	1.8	6.4		7.3	7.4	13.5	8.1	23.1		16.1	17.6	12.7	10.5	1.9	3.0	4.8	9.2	13.9	2.5	4.8	6.2	7.2	12.1	6.7	12.4	16.0	6.9	8.6	7.4	5.6	0.6	8.8	1.8	5.4	7.7	5.2	3.6
es	6.2	14.3	6.8	8.0	15.7	12.9	16.4	33.2	13.5		25.6	19.9	30.1	8.1	8.7	7.7	16.1	23.8	7.9	9.9	11.9	13.3	14.1	8.1	12.7	6.7	14.7	11.6	6.0	8.1	2.6	13.7	5.2	10.0	17.8	12.3	6.6
fr	6.0	12.7	5.0	8.3	15.6	14.5	15.4	31.6	18.6	26.4		17.2	6.8	6.9	7.7	15.0	24.6	7.3	8.7	10.7	13.1	15.9	8.1	24.2	26.0	16.5	12.7	5.8	7.1	2.1	13.8	4.2	9.8	17.0	11.1	6.6	
fr-ca	4.9	12.5	2.8	7.8	14.3	12.9	15.4	27.8	14.0	23.7		18.1	6.8	6.8	7.9	13.7	23.4	7.5	8.8	10.3		15.1	7.2	18.6	23.2	15.3	11.3	6.1	6.6	3.3	12.5	5.0	9.7	15.4		6.2	
gl	2.6	7.3	4.7	2.9	7.4	5.3	8.5	23.4	9.2	34.4	16.0	15.2		2.5	3.5	2.8	9.8	19.3	3.6	4.2	5.6	6.9	6.5	4.3	22.4	23.7	7.7	5.9	1.7	3.1	0.2	4.3	2.3	3.9	9.4	5.8	4.2
he	3.4	5.7	1.8	3.7	6.1	5.4	6.3	25.7	4.2	15.3	13.6	10.3	5.1		2.5	3.2	8.9	11.2	4.1	4.5	4.6	5.4	6.5	3.7	13.7	15.0	6.3	8.0	1.9	2.6	1.0	5.2	1.8	5.1	10.7	6.9	4.6
hr	1.6	8.7	29.3	7.0	6.5	5.8	6.6	24.4	4.4	12.6	9.9	7.8	5.7	1.5		4.3	8.2	10.4	1.8	4.0	14.1	5.3	6.1	5.4	12.1	12.6	7.3	8.3	4.6	12.6	11.7	6.0	1.9	6.9	9.4	4.8	2.9
hu	1.6	5.6	2.6		5.9	7.0	5.5	16.7	6.5	10.8	10.9	9.3	3.9	2.1	3.6		6.6	8.2	4.4	6.2	3.9	4.5	6.0	4.3	9.7	9.9	7.1	5.8	3.4	4.2	1.2	5.3	3.0	4.4	8.5	6.5	4.2
id	4.1	9.1	4.2	5.2	10.1	6.7	11.1	24.9	8.2	16.4	15.1	11.1	9.9	5.1	5.6	5.2		12.7	5.8	9.1	7.0	10.0	9.4	5.5	14.6	16.7	9.8	8.1	3.6	5.6	1.8	9.3	4.6	7.3	18.5	11.0	6.2
it	5.3	11.7	5.0	6.9	13.1	11.5	14.5	30.0	13.9	26.4	24.9	20.0	19.3	6.2	7.0	6.7	14.0		7.3	9.0	9.9	13.3	12.8	7.3	22.8	24.9	13.3	10.2	5.4	7.1	2.3	11.9	4.6	8.8	15.3	10.7	5.8
ja	1.4	1.9	0.7	1.8	3.1	2.7	2.5	7.9	2.2	6.0	6.0	4.7	2.3	1.4	1.3	2.0	3.5	4.6		16.9	1.6	2.6	3.1	1.8	5.1	4.9	2.8	2.7	1.2	1.8	0.5	2.6	1.9	2.2	5.9		
ko	0.9	1.7		1.3	2.0	1.7	1.7	8.7	1.3	4.7	4.4	3.4	1.5	0.9	0.7	1.5	3.1	3.2	9.2		1.2	1.3	1.9	1.4	4.3	4.6	2.0	2.1	1.0	1.5	0.4	1.5	1.4	1.5	4.3		
mk	2.4	18.2	12.0	5.4	7.2	4.3	10.3	23.4	8.9	15.2	11.5	10.0	5.4	4.0	12.6	3.7	8.9	11.1	3.5	4.7		7.5	6.7	4.5	13.9	15.6	8.3	7.5	3.5	7.1	3.7	5.6	2.0	6.4	10.9	6.3	4.3
nb	2.7	8.5		5.4	32.7	9.8	8.9	35.1	9.5	17.0	14.6		8.0	3.1	3.9	4.5	9.9	15.0	5.5	5.7	6.7		4.7	14.2		9.5	7.5	3.2	3.9	0.6	26.3	1.9	6.2	7.8			
nl	2.4	8.2	2.9	5.9	14.2	16.1	8.4	26.5	13.4	16.8	16.7	13.5	7.3	3.9	4.8	5.3	11.4	13.3	5.2	5.9	5.9		5.3	13.8	15.4	7.8	7.6	4.1	5.1	1.6	11.1	3.2	6.1	10.6	8.0	5.1	
pl	1.8	7.4	2.9	8.2	6.6	6.5	5.4	15.1	7.5	11.4	11.3	8.6	5.2	2.3	4.8	4.0	7.5	8.6	4.2	5.7	5.2	4.1	6.2		9.6	9.9	6.2	9.5	6.2	5.3	1.5	5.6	2.4	8.9	7.7	6.3	3.6
pt-br	7.4	15.2	7.0	8.0	15.5	13.2	18.7	35.0	12.0	32.4	26.7	19.0	23.0	8.8	10.3	8.4	17.5	24.4	7.8	10.6	13.1	14.3	14.9	8.9		15.3	11.7	6.6	8.1	2.0	14.3	6.2	9.3	18.0	12.9	5.8	
pt-pt	6.5	14.7	7.4	8.6	16.8	12.9	17.6	37.3	16.0	31.0	26.6	20.3	23.0	8.7	9.8	8.1	18.6	24.8	7.8	10.7	12.5		14.8	8.5		15.1	11.8	6.4	8.9	2.8	14.6	5.3	10.8	18.8	13.2	6.7	
ro	3.2	9.7	3.7	5.1	9.4	7.5	10.4	25.0	6.7	18.8	19.3	14.6	10.0	4.0	5.7	5.9	11.0	15.5	4.3	6.4	7.3	8.0	8.1	5.2	15.4	17.7		8.0	3.6	5.0	1.9	7.0	3.3	6.6	12.7	7.8	4.9
ru	3.3	12.6	4.2	7.7	8.5	8.8	8.3	18.7	9.9	14.3	14.5	11.0	6.0	4.9	6.8	5.6	9.5	11.7	6.1	7.7	7.4	8.0	8.1	8.9	12.4	13.9	8.2		5.8	5.4	2.7	8.2	29.2	22.5	11.5	9.1	5.2
sk	0.7	5.1	2.7	27.0	4.3	5.7	3.2	16.9	9.3	9.4	8.5	6.7	2.7	1.0	5.1	3.7	4.9	6.9	2.2	3.9	3.5	4.9	5.0	7.1	7.8	8.5	3.5	6.6		5.0	1.5	4.3	1.6	5.4	5.4	2.3	2.5
sl	1.2	6.2	7.6	5.5	4.7	7.6	5.8	17.3	5.9	11.4	8.5	6.4	3.2	1.2	11.2	3.9	6.5	7.8	2.7	4.2	6.3	4.3	5.5	4.8		9.9	4.8	5.9	3.6		1.9	4.1	2.2	4.3	7.4	3.8	2.6
sr	1.8	7.6	33.3	5.1	3.7	3.8	5.8	22.8	3.2	11.9	9.1	7.5	3.5	1.1	30.4	2.7	6.1	8.2	1.2	2.9	13.7	3.3	3.3	3.9	10.8	11.3	5.6	7.2	2.8	9.5		3.0	1.1	5.7	6.8	4.3	3.1
sv	2.2	7.4	4.8	5.9	26.5	12.6	8.1	31.8	11.0	16.9	15.7	10.7	7.1	3.3	5.5	5.4	11.6	13.3	4.8	6.2	5.2	25.4	11.5	5.8	15.0	17.4	7.9	8.1	3.8	4.7	1.0		3.2	6.9	12.9	7.8	4.8
tr	2.2	3.5	2.0	2.6	3.9	4.1	4.7	15.9	2.9	9.4	7.7	6.7	3.6	1.6	2.1	3.4	6.7	6.4	4.3	7.0	3.5	3.1	4.2	2.5	9.0	8.4	4.6	4.0	1.8	2.3	0.8	3.5		3.3	8.2	6.7	4.4
uk	2.9	12.3	5.3	7.4	7.5	7.5	8.4	20.7	6.5	14.2	14.1	11.2	5.5	3.5	6.6	4.7	9.5	11.2	4.9	5.8	7.2	6.3	6.9	9.6		12.9	7.2	23.5	4.9	5.7	2.6	6.9	2.6	11.4	7.9	4.9	
vi	4.2	7.5	4.0	4.7	8.5	6.0	8.8	20.2	7.3	13.7	13.2	9.9	6.5	4.6	4.9	4.7	14.7	10.7	5.6	9.3	6.9	5.7	7.3	4.5	13.0	14.1	8.5	7.2	3.4	4.6	1.7	8.2	4.0	6.7		9.9	6.7
zh-cn	2.1	3.2	1.0	2.2	3.8	3.2	4.5	11.8	3.8	8.2	7.6		3.2	1.7	1.9	3.0	6.6	6.0		3.4		3.8	2.2	7.1	7.9	4.1	4.1	1.6	2.4	0.9	3.1	2.3	3.0	10.8			
zh-tw	2.2	3.1	1.1	2.1	3.7	2.8	3.9	10.7	3.4	7.5	7.2	6.1	2.8	1.8	1.6	3.0	6.2	5.4		2.8		3.5	2.3	6.3	6.9	3.5	3.9	1.4	2.1	0.9	3.0	2.4	2.9	10.0			

Table 1: WikiMatrix: BLEU scores on the TED test set for some selected languages. All NMT systems were trained on the mined texts only.