Automatic Evaluation of the WMT23 General Machine Translation Task

In this document, we present an automatic evaluation of the systems submitted to the general machine translation task. Please keep in mind that these rankings are not official. WMT only uses human evaluation for the official rankings.

We ran three different automatic metrics:

- chrF (Popović, 2015): A tokenization independent metric operating at character-level with a higher correlation with human judgments than BLEU.
- BLEU (Papineni et al., 2002): The standard BLEU.
- COMET (Rei et al., 2020): A state-of-the-art metric based on a pre-trained language model. We used the default model "Unbabel/wmt22-comet-da."

chrF and BLEU scores are computed with SacreBLEU (Post, 2018). We ranked the systems according to their scores but display the rank only constrained systems. Unconstrained systems are in gray.

We also tested whether the difference between systems' metric scores is statistically significant. We used the default parameters of "comet-compare" for paired bootstrap resampling (Koehn, 2004). In the tables reporting on statistical significant testing, the background color is darker for more significant differences (lower p-value) and the score difference is underlined if the p-value is below 0.05.

¹https://github.com/mjpost/sacrebleu

System	Rank	chrF	System	Rank	BLEU	System	Rank	COMET
GPT4-5shot	n/a	61.0	GPT4-5shot	n/a	32.8	CUNI-GA	1	90.9
CUNI-GA	1	57.9	CUNI-Transformer	1	30.2	GPT4-5shot	n/a	90.8
GTCOM_Peter	n/a	57.6	GTCOM_Peter	n/a	29.8	ONLINE-W	n/a	89.4
CUNI-Transformer	2	57.4	CUNI-GA	2	29.5	GTCOM_Peter	n/a	88.9
MUNI-NLP	3	57.0	MUNI-NLP	3	28.3	ONLINE-B	n/a	88.8
Lan-BridgeMT	n/a	55.7	Lan-BridgeMT	n/a	27.5	ONLINE-A	n/a	88.2
ONLINE-W	n/a	55.0	ONLINE-W	n/a	26.8	CUNI-Transformer	2	88.0
ONLINE-B	n/a	54.7	ONLINE-B	n/a	25.7	ONLINE-G	n/a	87.7
ONLINE-A	n/a	54.4	ONLINE-A	n/a	25.4	MUNI-NLP	3	87.0
ONLINE-G	n/a	53.7	NLLB_MBR_BLEU	n/a	25.1	ONLINE-Y	n/a	86.5
ONLINE-Y	n/a	53.4	NLLB_Greedy	n/a	24.9	NLLB_Greedy	n/a	86.3
NLLB_Greedy	n/a	52.5	ONLINE-G	n/a	24.8	NLLB_MBR_BLEU	n/a	86.3
NLLB_MBR_BLEU	n/a	52.3	ONLINE-Y	n/a	24.2	Lan-BridgeMT	n/a	86.0

Table 1: Scores for the cs \rightarrow uk translation task: chrF (nrefs:1|case:mixedleff:yeslnc:6|nw:0|space:nolversion:2.2.1), BLEU (nrefs:1|case:mixedleff:noltok:13a|smooth:explversion:2.2.1), COMET (Unbabel/wmt22-comet-da).

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System	Rank	chrF	System	Rank	BLEU	System	Rank	
ONLINE-W	n/a	76.3	ONLINE-W	n/a	59.4	ONLINE-W	n/a	
ONLINE-B	n/a	70.4	ONLINE-B	n/a	50.1	CUNI-GA	1	
ZengHuiMT	n/a	67.5	ONLINE-A	n/a	43.4	ONLINE-B	n/a	
ONLINE-A	n/a	66.3	CUNI-GA	1	43.3	GPT4-5shot	n/a	
CUNI-GA	1	65.9	ZengHuiMT	n/a	43.1	ONLINE-A	n/a	
GTCOM_Peter	n/a	65.4	CUNI-DocTransformer	2	42.5	CUNI-DocTransformer	2	
CUNI-DocTransformer	2	65.1	GTCOM_Peter	n/a	42.3	GTCOM_Peter	n/a	
ONLINE-Y	n/a	64.6	CUNI-Transformer	3	41.4	ONLINE-M	n/a	
CUNI-Transformer	3	63.9	ONLINE-Y	n/a	40.8	Lan-BridgeMT	n/a	
Lan-BridgeMT	n/a	63.8	Lan-BridgeMT	n/a	40.7	CUNI-Transformer	3	
ONLINE-G	n/a	63.7	ONLINE-G	n/a	39.6	NLLB_Greedy	n/a	
ONLINE-M	n/a	63.2	ONLINE-M	n/a	39.6	ONLINE-Y	n/a	
GPT4-5shot	n/a	62.3	GPT4-5shot	n/a	37.8	NLLB_MBR_BLEU	n/a	
NLLB_Greedy	n/a	60.0	NLLB_Greedy	n/a	35.9	ONLINE-G	n/a	
NLLB_MBR_BLEU	n/a	59.1	NLLB_MBR_BLEU	n/a	35.1	ZengHuiMT	n/a	

Table 2: Scores for the en→cs translation task: chrF (nrefs:1|case:mixedleff:yeslnc:6|nw:0|space:nolversion:2.2.1), BLEU (nrefs:1|case:mixedleff:noltok:13a|smooth:explversion:2.2.1), COMET (Unbabel/wmt22-comet-da).

System	Rank	chrF	•	System	Rank	BLEU	System	Rank	COMET
ONLINE-W	n/a	72.1		ONLINE-W	n/a	51.8	GPT4-5shot	n/a	86.3
ONLINE-A	n/a	70.0		GPT4-5shot	n/a	47.9	ONLINE-W	n/a	86.0
GPT4-5shot	n/a	69.8		ONLINE-A	n/a	47.9	ONLINE-B	n/a	85.6
ONLINE-B	n/a	69.1		ONLINE-B	n/a	46.3	ONLINE-A	n/a	85.5
ONLINE-G	n/a	69.1		ONLINE-G	n/a	46.0	ONLINE-Y	n/a	84.9
ONLINE-Y	n/a	68.4		ONLINE-Y	n/a	43.9	ONLINE-M	n/a	84.8
ZengHuiMT	n/a	67.6		GTCOM_Peter	n/a	42.2	ONLINE-G	n/a	84.6
Lan-BridgeMT	n/a	66.7		Lan-BridgeMT	n/a	42.1	GTCOM_Peter	n/a	82.7
GTCOM_Peter	n/a	66.6		ONLINE-M	n/a	41.3	NLLB_MBR_BLEU	n/a	81.4
ONLINE-M	n/a	66.5		ZengHuiMT	n/a	40.8	ZengHuiMT	n/a	81.1
NLLB_MBR_BLEU	n/a	57.6		NLLB_Greedy	n/a	33.1	Lan-BridgeMT	n/a	80.9
NLLB_Greedy	n/a	57.3		AIRC	1	32.4	NLLB_Greedy	n/a	79.9
AIRC	1	57.2	_	NLLB_MBR_BLEU	n/a	32.4	AIRC	1	78.7

Table 3: Scores for the de→en translation task: chrF (nrefs:1|case:mixedleff:yeslnc:6|nw:0|space:nolversion:2.2.1), BLEU (nrefs:1|case:mixedleff:noltok:13a|smooth:explversion:2.2.1), COMET (Unbabel/wmt22-comet-da).

System	Rank	chrF	System	Rank	BLEU	System	Rank	COMET
ONLINE-W	n/a	71.8	ONLINE-W	n/a	47.8	ONLINE-W	n/a	85.5
ONLINE-A	n/a	69.7	ONLINE-A	n/a	43.7	GPT4-5shot	n/a	85.0
ZengHuiMT	n/a	69.4	GPT4-5shot	n/a	43.6	ONLINE-B	n/a	84.8
GPT4-5shot	n/a	69.1	ONLINE-Y	n/a	43.6	ONLINE-Y	n/a	84.1
ONLINE-B	n/a	69.1	ONLINE-G	n/a	43.2	ONLINE-A	n/a	83.7
ONLINE-Y	n/a	69.1	ONLINE-B	n/a	42.7	ONLINE-G	n/a	82.5
ONLINE-G	n/a	69.0	ONLINE-M	n/a	40.5	ONLINE-M	n/a	81.7
ONLINE-M	n/a	66.9	ZengHuiMT	n/a	40.5	Lan-BridgeMT	n/a	80.4
Lan-BridgeMT	n/a	66.1	Lan-BridgeMT	n/a	39.4	ZengHuiMT	n/a	79.4
NLLB_Greedy	n/a	56.2	NLLB_Greedy	n/a	31.1	NLLB_MBR_BLEU	n/a	78.0
NLLB_MBR_BLEU	n/a	55.4	NLLB_MBR_BLEU	n/a	29.6	NLLB_Greedy	n/a	77.9
AIRC	1	52.2	AIRC	1	26.5	AIRC	1	72.9

Table 4: Scores for the en \rightarrow de translation task: chrF (nrefs:1|case:mixed|eff:yes|nc:6|nw:0|space:no|version:2.2.1), BLEU (nrefs:1|case:mixed|eff:no|tok:13a|smooth:exp|version:2.2.1), COMET (Unbabel/wmt22-comet-da).

System	Rank	chrF	System	Rank	BLEU	System	Rank	COMET
ONLINE-B	n/a	87.5	ONLINE-B	n/a	76.5	ONLINE-B	n/a	89.9
ZengHuiMT	n/a	76.3	GTCOM_Peter	n/a	59.2	ONLINE-A	n/a	87.0
GTCOM_Peter	n/a	76.2	ZengHuiMT	n/a	56.6	GPT4-5shot	n/a	86.9
ONLINE-A	n/a	73.3	ONLINE-A	n/a	53.9	GTCOM_Peter	n/a	86.7
GPT4-5shot	n/a	71.4	GPT4-5shot	n/a	51.2	ONLINE-G	n/a	85.6
UvA-LTL	1	70.9	UvA-LTL	1	51.0	ZengHuiMT	n/a	85.6
ONLINE-Y	n/a	70.5	ONLINE-Y	n/a	49.8	ONLINE-Y	n/a	84.9
ONLINE-G	n/a	69.8	ONLINE-G	n/a	49.3	UvA-LTL	1	84.7
NLLB_Greedy	n/a	64.4	NLLB_Greedy	n/a	42.5	NLLB_MBR_BLEU	n/a	82.9
Lan-BridgeMT	n/a	63.5	Lan-BridgeMT	n/a	41.4	NLLB_Greedy	n/a	82.8
NLLB_MBR_BLEU	n/a	63.0	NLLB_MBR_BLEU	n/a	40.7	Samsung_Research_Philippines	2	82.6
Samsung_Research_Philippines	2	55.5	Samsung_Research_Philippines	2	34.0	Lan-BridgeMT	n/a	82.4

Table 5: Scores for the he→en translation task: chrF (nrefs:1|case:mixedleff:yeslnc:6|nw:0|space:nolversion:2.2.1), BLEU (nrefs:1|case:mixedleff:noltok:13a|smooth:explversion:2.2.1), COMET (Unbabel/wmt22-comet-da).

System	Rank	chrF	System	Rank	BLEU	System	Rank	COMET
ONLINE-B	n/a	66.4	ONLINE-B	n/a	47.8	ONLINE-B	n/a	86.4
ZengHuiMT	n/a	62.1	ONLINE-A	n/a	38.9	ONLINE-A	n/a	85.7
ONLINE-A	n/a	61.7	GTCOM_Peter	n/a	37.2	GPT4-5shot	n/a	84.9
GTCOM_Peter	n/a	61.1	ONLINE-Y	n/a	37.2	GTCOM_Peter	n/a	84.7
ONLINE-Y	n/a	60.4	ZengHuiMT	n/a	36.5	ONLINE-Y	n/a	84.7
UvA-LTL	1	59.0	UvA-LTL	1	35.0	UvA-LTL	1	84.2
ONLINE-G	n/a	58.1	Samsung_Research_Philippines	2	33.3	Samsung_Research_Philippines	2	83.7
Samsung_Research_Philippines	2	57.3	ONLINE-G	n/a	33.2	Lan-BridgeMT	n/a	83.0
Lan-BridgeMT	n/a	54.9	NLLB_MBR_BLEU	n/a	30.8	NLLB_Greedy	n/a	82.9
NLLB_Greedy	n/a	54.8	Lan-BridgeMT	n/a	30.5	ZengHuiMT	n/a	82.7
NLLB_MBR_BLEU	n/a	54.3	NLLB_Greedy	n/a	30.3	NLLB_MBR_BLEU	n/a	82.5
GPT4-5shot	n/a	54.0	GPT4-5shot	n/a	27.0	ONLINE-G	n/a	82.2

Table 6: Scores for the en \rightarrow he translation task: chrF (nrefs:1|case:mixed|eff:yes|nc:6|nw:0|space:no|version:2.2.1), BLEU (nrefs:1|case:mixed|eff:no|tok:13a|smooth:exp|version:2.2.1), COMET (Unbabel/wmt22-comet-da).

CC	Rank	System	BLEU	Rank	System	chrF	Rank	System
8	1	SKIM	25.9	n/a	ONLINE-W	51.4	n/a	ONLINE-W
8	n/a	GPT4-5shot	24.8	1	SKIM	51.2	n/a	GPT4-5shot
8	n/a	ONLINE-W	24.1	n/a	GPT4-5shot	51.1	1	SKIM
8	2	NAIST-NICT	23.9	n/a	ONLINE-B	49.6	n/a	ONLINE-A
8	n/a	ONLINE-Y	23.0	2	NAIST-NICT	49.5	2	NAIST-NICT
8	n/a	ONLINE-B	23.0	n/a	ONLINE-A	49.5	n/a	ONLINE-Y
8	n/a	ONLINE-A	22.6	n/a	ZengHuiMT	49.5	n/a	ZengHuiMT
8	n/a	GTCOM_Peter	22.3	n/a	GTCOM_Peter	49.3	n/a	ONLINE-B
7	3	ANVITA	22.3	n/a	ONLINE-Y	48.7	n/a	GTCOM_Peter
7	n/a	Lan-BridgeMT	20.9	3	ANVITA	47.3	n/a	Lan-BridgeMT
7	n/a	ZengHuiMT	20.2	n/a	Lan-BridgeMT	46.7	3	ANVITA
7	n/a	ONLINE-G	18.3	n/a	ONLINE-G	45.5	n/a	ONLINE-G
7	n/a	ONLINE-M	17.6	n/a	KYB	43.9	n/a	KYB
7	n/a	KYB	17.2	n/a	ONLINE-M	43.9	n/a	ONLINE-M
7	n/a	NLLB_MBR_BLEU	14.9	4	AIRC	40.5	4	AIRC
7	4	AIRC	14.7	n/a	NLLB_MBR_BLEU	39.2	n/a	LB_MBR_BLEU
7	n/a	NLLB_Greedy	14.2	n/a	NLLB_Greedy	39.0	n/a	NLLB_Greedy

Table 7: Scores for the ja \rightarrow en translation task: chrF (nrefs:1|case:mixedleff:yeslnc:6|nw:0|space:nolversion:2.2.1), BLEU (nrefs:1|case:mixedleff:noltok:13a|smooth:explversion:2.2.1), COMET (Unbabel/wmt22-comet-da).

System	Rank	chrF	System	Rank	BLEU	System	Rank	COMET
ONLINE-B	n/a	35.2	ONLINE-B	n/a	25.3	ONLINE-B	n/a	88.2
ONLINE-Y	n/a	34.1	ONLINE-W	n/a	24.5	ONLINE-W	n/a	87.5
ONLINE-W	n/a	33.5	ONLINE-Y	n/a	24.5	ONLINE-Y	n/a	87.3
SKIM	1	33.5	SKIM	1	24.3	GPT4-5shot	n/a	87.0
ZengHuiMT	n/a	32.9	NAIST-NICT	2	22.6	SKIM	1	86.6
NAIST-NICT	2	32.0	ZengHuiMT	n/a	22.6	NAIST-NICT	2	86.2
ONLINE-A	n/a	31.4	ONLINE-A	n/a	21.4	ZengHuiMT	n/a	85.3
GPT4-5shot	n/a	31.0	GPT4-5shot	n/a	21.3	ONLINE-A	n/a	85.2
Lan-BridgeMT	n/a	30.4	Lan-BridgeMT	n/a	20.5	Lan-BridgeMT	n/a	84.5
ONLINE-M	n/a	29.6	ONLINE-M	n/a	19.8	ONLINE-M	1	n/a3.3
ANVITA	3	29.3	ANVITA	3	19.4	ANVITA	3	82.7
KYB	n/a	27.7	KYB	n/a	17.8	KYB	n/a	80.8
AIRC	4	27.6	AIRC	4	17.6	AIRC	4	80.7
ONLINE-G	n/a	27.3	ONLINE-G	n/a	17.2	ONLINE-G	n/a	80.4
NLLB_Greedy	n/a	20.9	NLLB_Greedy	n/a	11.3	NLLB_Greedy	n/a	79.3
NLLB_MBR_BLEU	n/a	18.7	NLLB_MBR_BLEU	n/a	9.0	NLLB_MBR_BLEU	n/a	77.7

Table 8: Scores for the en \rightarrow ja translation task: chrF (nrefs:1|case:mixedleff:yeslnc:6|nw:0|space:nolversion:2.2.1), BLEU (nrefs:1|case:mixedleff:noltok:ja-mecab-0.996-IPA|smooth:explversion:2.2.1), COMET (Unbabel/wmt22-comet-da).

System	Rank	chrF	System	Rank	BLEU	System	Rank	COMET
GPT4-5shot	n/a	60.4	ONLINE-B	n/a	34.5	GPT4-5shot	n/a	83.5
ONLINE-G	n/a	59.6	GPT4-5shot	n/a	34.4	ONLINE-Y	n/a	82.5
ONLINE-A	n/a	59.4	ONLINE-G	n/a	34.0	ONLINE-B	n/a	82.3
ONLINE-B	n/a	59.4	ONLINE-A	n/a	33.8	ONLINE-W	n/a	82.2
ZengHuiMT	n/a	58.9	ONLINE-Y	n/a	33.2	ONLINE-G	n/a	82.0
ONLINE-Y	n/a	58.6	ONLINE-W	n/a	33.1	ONLINE-A	n/a	81.9
PROMT	n/a	58.4	PROMT	n/a	32.8	PROMT	n/a	80.9
ONLINE-W	n/a	58.3	Lan-BridgeMT	n/a	31.8	ONLINE-M	n/a	80.7
Lan-BridgeMT	n/a	57.4	ZengHuiMT	n/a	31.3	NLLB_MBR_BLEU	n/a	80.5
ONLINE-M	n/a	56.7	NLLB_MBR_BLEU	n/a	31.0	NLLB_Greedy	n/a	80.1
NLLB_MBR_BLEU	n/a	55.8	ONLINE-M	n/a	30.7	Lan-BridgeMT	n/a	79.9
NLLB_Greedy	n/a	55.5	NLLB_Greedy	n/a	30.3	ZengHuiMT	n/a	79.5

Table 9: Scores for the ru—en translation task: chrF (nrefs:1|case:mixedleff:yeslnc:6|nw:0|space:nolversion:2.2.1), BLEU (nrefs:1|case:mixedleff:noltok:13a|smooth:explversion:2.2.1), COMET (Unbabel/wmt22-comet-da).

System	Rank	chrF	System	Rank	BLEU	System	Rank	COMET
ONLINE-B	n/a	61.9	ONLINE-B	n/a	40.4	ONLINE-G	n/a	86.6
ONLINE-A	n/a	59.0	ONLINE-A	n/a	34.8	ONLINE-W	n/a	86.6
ONLINE-G	n/a	58.9	ONLINE-G	n/a	32.9	ONLINE-B	n/a	86.2
ZengHuiMT	n/a	58.8	ONLINE-Y	n/a	32.0	GPT4-5shot	n/a	86.1
ONLINE-W	n/a	56.6	ZengHuiMT	n/a	31.6	ONLINE-Y	n/a	85.5
ONLINE-Y	n/a	56.4	ONLINE-W	n/a	31.4	ONLINE-A	n/a	85.3
GPT4-5shot	n/a	56.2	ONLINE-M	n/a	30.9	ONLINE-M	n/a	83.2
Lan-BridgeMT	n/a	55.7	Lan-BridgeMT	n/a	30.7	Lan-BridgeMT	n/a	83.1
PROMT	n/a	55.4	GPT4-5shot	n/a	30.6	NLLB_Greedy	n/a	82.9
ONLINE-M	n/a	55.1	PROMT	n/a	30.5	NLLB_MBR_BLEU	n/a	82.7
NLLB_Greedy	n/a	53.3	NLLB_MBR_BLEU	n/a	28.4	PROMT	n/a	82.3
NLLB_MBR_BLEU	n/a	53.1	NLLB_Greedy	n/a	28.2	ZengHuiMT	n/a	81.3

Table 10: Scores for the en→ru translation task: chrF (nrefs:1|case:mixedleff:yes|nc:6|nw:0|space:nolversion:2.2.1), BLEU (nrefs:1|case:mixedleff:noltok:13a|smooth:explversion:2.2.1), COMET (Unbabel/wmt22-comet-da).

System	Rank	chrF	System	Rank	BLEU	System	Rank	COMET
GTCOM_Peter	n/a	69.3	ONLINE-W	n/a	47.4	ONLINE-W	n/a	87.5
ONLINE-W	n/a	69.2	GTCOM_Peter	n/a	46.4	GPT4-5shot	n/a	87.1
ONLINE-B	n/a	69.0	ONLINE-B	n/a	46.0	ONLINE-B	n/a	86.8
ZengHuiMT	n/a	68.5	ONLINE-A	n/a	45.9	GTCOM_Peter	n/a	86.3
ONLINE-A	n/a	68.3	ONLINE-Y	n/a	45.7	ONLINE-A	n/a	86.3
ONLINE-Y	n/a	68.2	ONLINE-G	n/a	44.9	ONLINE-G	n/a	86.2
GPT4-5shot	n/a	68.1	GPT4-5shot	n/a	43.9	ONLINE-Y	n/a	85.8
ONLINE-G	n/a	68.0	ZengHuiMT	n/a	43.5	Lan-BridgeMT	n/a	84.8
Lan-BridgeMT	n/a	66.2	Lan-BridgeMT	n/a	42.3	ZengHuiMT	n/a	84.4
NLLB_Greedy	n/a	62.4	NLLB_MBR_BLEU	n/a	38.1	NLLB_MBR_BLEU	n/a	84.3
NLLB_MBR_BLEU	n/a	62.4	NLLB_Greedy	n/a	37.8	NLLB_Greedy	n/a	84.2

Table 11: Scores for the uk—en translation task: chrF (nrefs:1lcase:mixedleff:yeslnc:6lnw:0lspace:nolversion:2.2.1), BLEU (nrefs:1lcase:mixedleff:noltok:13alsmooth:explversion:2.2.1), COMET (Unbabel/wmt22-comet-da).

System	Rank	chrF	System	Rank	BLEU	System	Rank	COMET
ONLINE-B	n/a	61.7	ONLINE-B	n/a	39.8	ONLINE-W	n/a	86.7
ONLINE-W	n/a	59.2	ONLINE-W	n/a	34.9	ONLINE-B	n/a	85.6
ZengHuiMT	n/a	56.4	ONLINE-A	n/a	30.3	GPT4-5shot	n/a	85.3
ONLINE-G	n/a	56.1	ONLINE-Y	n/a	29.5	ONLINE-G	n/a	85.3
ONLINE-A	n/a	55.8	ONLINE-G	n/a	28.6	ONLINE-A	n/a	83.2
ONLINE-Y	n/a	55.4	ZengHuiMT	n/a	27.8	ONLINE-Y	n/a	82.9
GTCOM_Peter	n/a	54.4	GTCOM_Peter	n/a	27.5	GTCOM_Peter	n/a	82.1
GPT4-5shot	n/a	53.0	GPT4-5shot	n/a	25.2	NLLB_Greedy	n/a	82.1
Lan-BridgeMT	n/a	51.9	NLLB_MBR_BLEU	n/a	24.9	NLLB_MBR_BLEU	n/a	81.7
NLLB_Greedy	n/a	50.8	Lan-BridgeMT	n/a	24.6	Lan-BridgeMT	n/a	80.4
NLLB_MBR_BLEU	n/a	50.5	NLLB_Greedy	n/a	24.5	ZengHuiMT	n/a	79.0

Table 12: Scores for the en→uk translation task: chrF (nrefs:1|case:mixedleff:yeslnc:6|nw:0|space:nolversion:2.2.1), BLEU (nrefs:1|case:mixedleff:noltok:13a|smooth:explversion:2.2.1), COMET (Unbabel/wmt22-comet-da).

System	Rank	chrF		System	Rank	BLEU	_	System	Rank	
HW-TSC	1	57.5		HW-TSC	1	33.6	_	HW-TSC	1	
ONLINE-B	n/a	57.5		ONLINE-B	n/a	33.5		ONLINE-B	n/a	
Yishu	n/a	57.4		Yishu	n/a	33.4		Yishu	n/a	
ZengHuiMT	n/a	54.6		ONLINE-A	n/a	28.3		GPT4-5shot	n/a	
ONLINE-G	n/a	53.9		Lan-BridgeMT	n/a	27.3		Lan-BridgeMT	n/a	
ONLINE-A	n/a	53.4		IOL_Research	2	27.2		ONLINE-G	n/a	
GPT4-5shot	n/a	53.1		ZengHuiMT	n/a	27.0		ONLINE-Y	n/a	
Lan-BridgeMT	n/a	53.1		GPT4-5shot	n/a	26.8		ONLINE-A	n/a	
ONLINE-W	n/a	52.5		ONLINE-G	n/a	26.6		ZengHuiMT	n/a	
IOL_Research	2	52.4		ONLINE-W	n/a	26.4		ONLINE-W	n/a	
ONLINE-Y	n/a	52.3		ONLINE-Y	n/a	25.0		IOL_Research	2	
ONLINE-M	n/a	49.7		ONLINE-M	n/a	23.5		ONLINE-M	n/a	
ANVITA	3	47.1		ANVITA	3	21.8		NLLB_MBR_BLEU	n/a	
NLLB_Greedy	n/a	46.1		NLLB_Greedy	n/a	20.5		ANVITA	3	
LLB_MBR_BLEU	n/a	45.8	N	LLB_MBR_BLEU	n/a	19.8		NLLB_Greedy	n/a	

Table 13: Scores for the zh—en translation task: chrF (nrefs:1|case:mixedleff:yeslnc:6|nw:0|space:nolversion:2.2.1), BLEU (nrefs:1|case:mixedleff:noltok:13a|smooth:explversion:2.2.1), COMET (Unbabel/wmt22-comet-da).

System	Rank	chrF	System	m Rank	BLEU		System	Rank	COMET
HW-TSC	1	53.8	HW-TS	C 1	58.6		ONLINE-B	n/a	88.1
Yishu	n/a	53.0	ONLINE-	A n/a	58.5		Yishu	n/a	88.1
ONLINE-B	n/a	52.9	Yish	u n/a	57.6		HW-TSC	1	87.3
ONLINE-A	n/a	52.8	ONLINE-	B n/a	57.5		GPT4-5shot	n/a	87.1
IOL_Research	2	51.9	IOL_Research	h 2	56.9		ONLINE-W	n/a	86.8
ONLINE-M	n/a	50.6	ONLINE-N	M n/a	54.9		Lan-BridgeMT	n/a	86.6
ONLINE-Y	n/a	49.8	ONLINE-	Y n/a	54.2		ONLINE-Y	n/a	86.5
ONLINE-G	n/a	49.4	ONLINE-	G n/a	54.1		ONLINE-A	n/a	86.2
ONLINE-W	n/a	47.3	ZengHuiM	T n/a	52.9		IOL Research	2	85.3
ZengHuiMT	n/a	47.0	ONLINE-V	V n/a	52.1		ZengHuiMT	n/a	84.3
Lan-BridgeMT	n/a	46.8	Lan-BridgeM	T n/a	50.2		ONLINE-M	n/a	84.2
GPT4-5shot	n/a	46.5	GPT4-5sho	ot n/a	49.6		ONLINE-G	n/a	83.8
ANVITA	3	36.9	ANVIT	A 3	38.9		NLLB Greedy	n/a	75.7
NLLB Greedy	n/a	26.3	NLLB Greed	ly n/a	27.4		ANVITA	3	75.6
NLLB_MBR_BLEU	n/a	21.1	NLLB_MBR_BLE	-	19.1	,	NLLB_MBR_BLEU	n/a	71.5

Table 14: Scores for the en \rightarrow zh translation task: chrF (nrefs:1lcase:mixedleff:yeslnc:6lnw:0lspace:nolversion:2.2.1), BLEU (nrefs:1lcase:mixedleff:noltok:zhlsmooth:explversion:2.2.1), COMET (Unbabel/wmt22-comet-da).

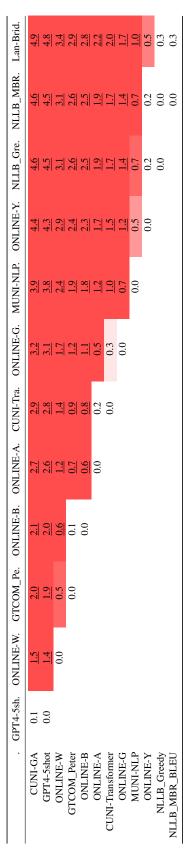


Table 15: Statistical significance testing of the COMET score difference for each system pair for the cs→uk.

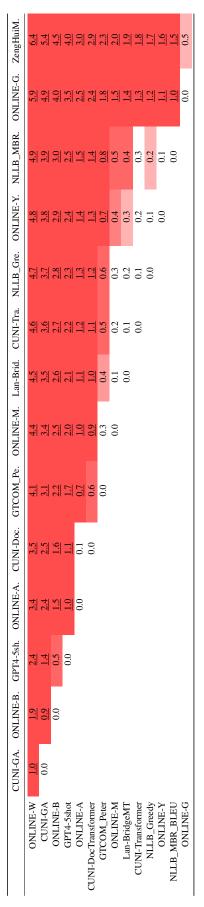


Table 16: Statistical significance testing of the COMET score difference for each system pair for the en→cs.

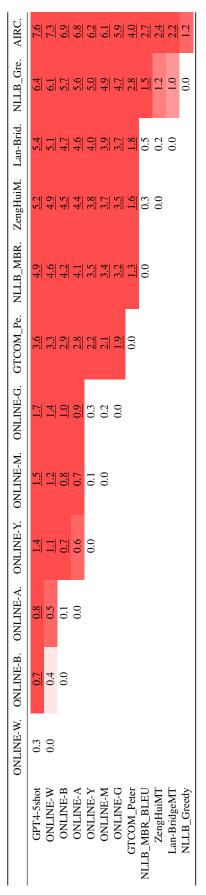


Table 17: Statistical significance testing of the COMET score difference for each system pair for the de→en.

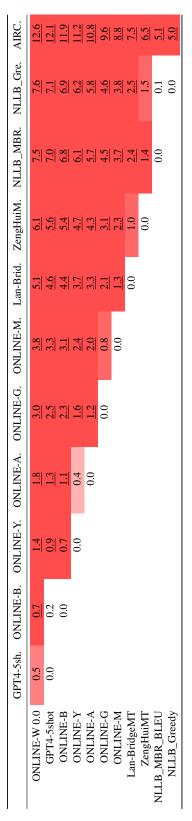


Table 18: Statistical significance testing of the COMET score difference for each system pair for the en →de.

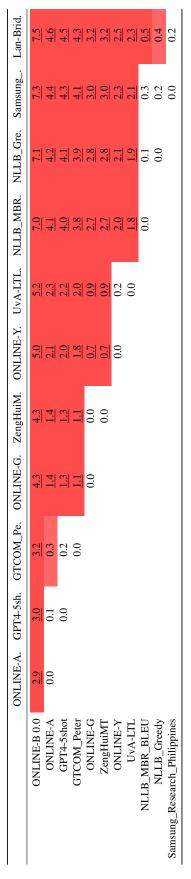


Table 19: Statistical significance testing of the COMET score difference for each system pair for the he →en.

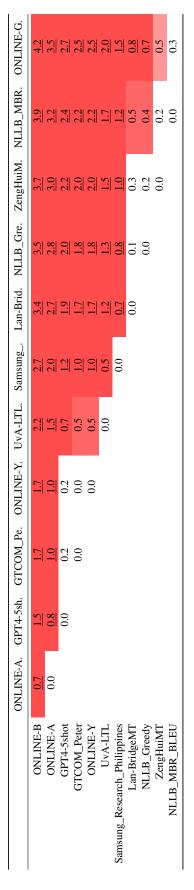


Table 20: Statistical significance testing of the COMET score difference for each system pair for the en→he.

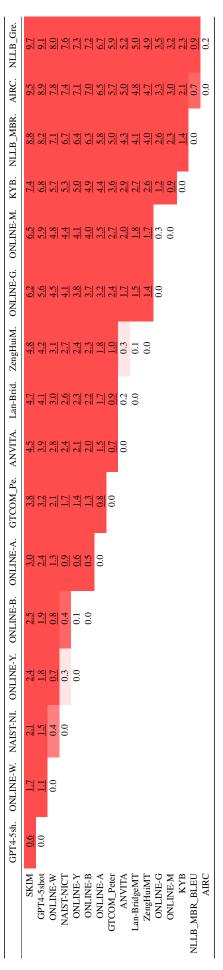


Table 21: Statistical significance testing of the COMET score difference for each system pair for the ja→en.

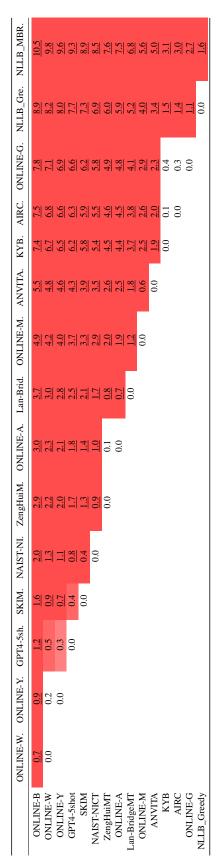


Table 22: Statistical significance testing of the COMET score difference for each system pair for the en→ja.

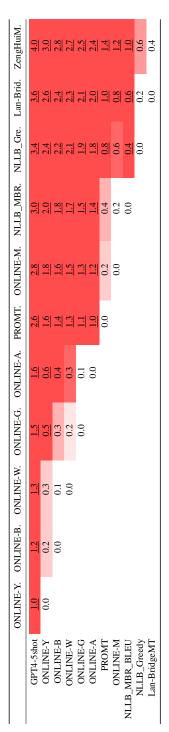


Table 23: Statistical significance testing of the COMET score difference for each system pair for the ru→en.

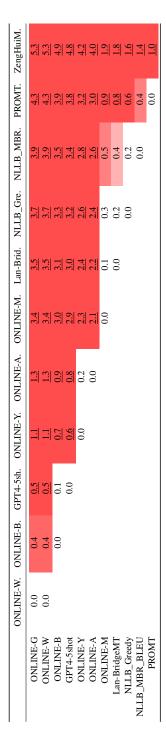


Table 24: Statistical significance testing of the COMET score difference for each system pair for the en→ru.

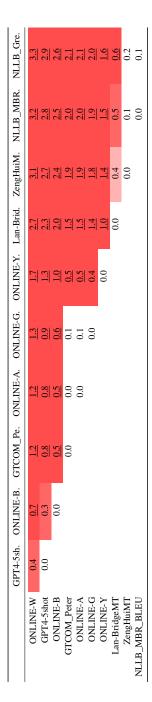


Table 25: Statistical significance testing of the COMET score difference for each system pair for the uk→en.

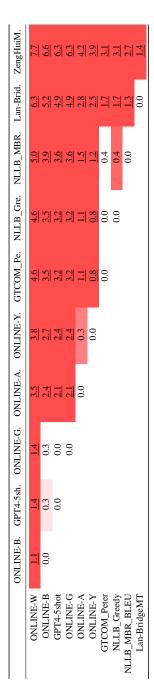


Table 26: Statistical significance testing of the COMET score difference for each system pair for the en→uk.

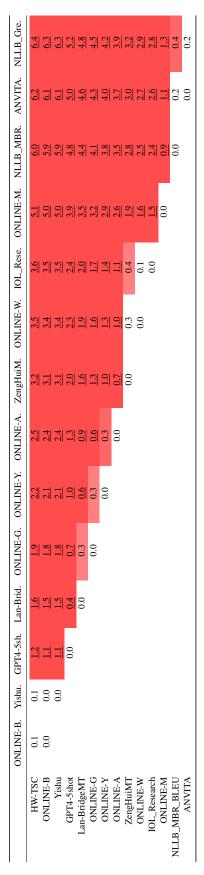


Table 27: Statistical significance testing of the COMET score difference for each system pair for the zh→en.

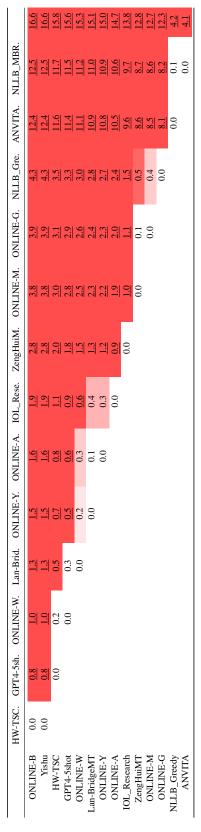


Table 28: Statistical significance testing of the COMET score difference for each system pair for the en→zh.

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