

Model	Task1	Task2	Task3
Attention	11.4	7.9	9.0
MTL	10.5	7.6	8.3
MTL + joint decoding (rescoring)	10.1	7.1	7.8
MTL + joint decoding (one-pass)	10.0	7.1	7.6
MTL-large + joint dec. (one-pass)	8.4	6.2	6.9
+ RNN-LM (separate)	7.9	5.8	6.7
DNN-hybrid *	9.0	7.2	9.6
DNN-hybrid	8.4	6.9	7.1
CTC-syllable	9.4	7.3	7.5

(*using only 236 hours for acoustic model training)