Table 6: Comparison of training time based on GPU and CPU. (Test evaluations for all the models were performed by CPU.)

Types	Model	Datasets	1-Batch Time (sec.)	Train Time (hr.)	Test Time (hr.)	Macro-F_1	Micro-F_1
CPU	DGCNN-3	RCV1	1.710	12	2.5	0.4328	0.7611
GPU	DGCNN-3	RCV1	0.767	6	2.5	0.4322	0.7611
CPU	DGCNN-6	NYTimes	1.437	16d	0.6	0.2985	0.6566
GPU	DGCNN-6	NYTimes	0.401	48	0.6	0.2991	0.6566

Table 7: Comparison of results on NYtimes dataset.

Models	Classes	Macro-F_1	Micro-F_1
SVM	2,318	0.2158	0.5217
HSVM	2,318	0.2187	0.5213
TD-SVM	2,318	0.2249	0.5404
HR-SVM	2,318	0.2571	0.6123
HLSTM	2,318	0.2141	0.5271
HAN	2,318	0.2217	0.5395
RCNN	2,318	0.2019	0.5311
XML-CNN	2,318	0.2001	0.5292
DCNN-3	2,318	0.2471	0.5793
DCNN-6	2,318	0.2669	0.6055
DGCNN-1	2,318	0.2147	0.5195
DGCNN-3	2,318	0.2791	0.6030
DGCNN-6	2,318	0.2991	0.6566
HR-DGCNN-1	2,318	0.2209	0.5293
HR-DGCNN-3	2,318	0.2807	0.6146
HR-DGCNN-6	2,318	**0.2995**	**0.6612**

Table 8: Comparsion of training time and results on NYTimes dataset. The evaluations for stand-alone (Native) and recursive hierarchical segmentation (RHS) programs were performed by DGCNN-6 and GPU.

Model	Macro-F_1	Micro-F_1	Training Time (days)
Native	0.2993	0.6481	15
RHS	0.2991	0.6566	2

Table 9: Number of parameters (in millions).

Dataset	1 Layer	3 Layers	6 Layers
RCV1	3.73	4.99	9.57
NYTimes	3.92	5.21	12.32

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