



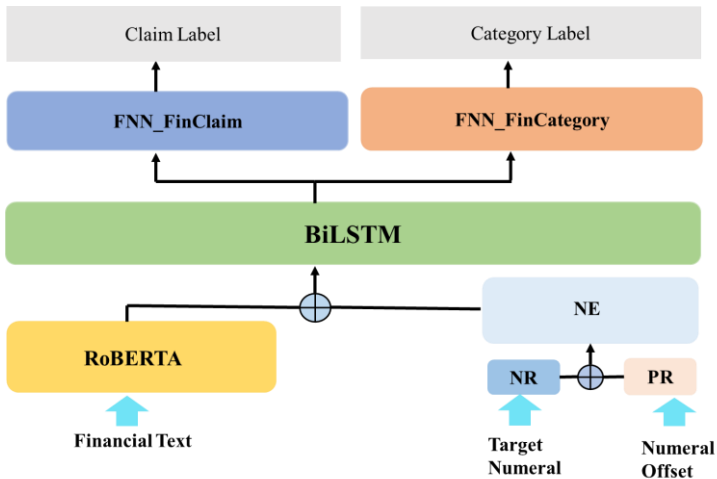
WUST at NTCIR-16 FinNum-3 Task

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1. Introduction

This poster introduces how we deal with the FinNum-3 task of NTCIR16. In the FinNum-3 task, the relationship between a numeral and a given label is the object of classification. In one text, given a target numeral and its offset in the text, models need to judge whether the given target numeral is in-claim or out-of-claim. In the experiments, we use the BiLSTM with multi-task learning architecture to detect the in-claim or out-of-claim of the target numeral in two kinds of financial texts.

2. Model Architecture



Main task: claim detection
Auxiliary task: numeral category classification

BiLSTM effectively captures the input context features. The two tasks share the parameters of the BiLSTM layer.

3. Experiments Results

Table 1: Experimental results on analyst's report.

Submission	Claim Detection		Numeral Category	
	Micro-F1	Macro-F1	Micro-F1	Macro_F1
CapsNet	80.32%	69.9%	62.59%	20.99%
WUST_1	84.89%	75.70%	56.13%	17.35%
CYUT_2	91.73%	86.76%	-	-
TMUNLP_2	91.11%	87.76%	94.03%	72.99%
CYUT_3	92.16%	88.20%	-	-
CYUT_1	92.11%	88.80%	-	-
TMUNLP_1	92.82%	89.56%	94.31%	73.68%
TMUNLP_3	92.75%	89.68%	94.67%	73.89%
IMNTPU_2	94.14%	91.64%	-	-
IMNTPU_3	95.20%	92.91%	-	-
IMNTPU_1	95.31%	93.18%	-	-

Table 2: Experimental results on earnings conference call.

Submission	Claim Detection		Numeral Category	
	Micro-F1	Macro-F1	Micro-F1	Macro-F1
CapsNet	89.97%	56.36%	49.64%	26.50%
BERFIN_2	85.10%	68.26%	-	-
WUST_1	93.37%	71.72%	48.76%	24.02%
BERFIN_1	94.67%	80.26%	-	-
LIPI_2	95.17%	81.33%	-	-
LIPI_1	95.09%	82.82%	-	-
LIPI_3	95.59%	84.73%	-	-
CYUT_1	94.67%	85.53%	-	-
Passau21_1	96.01%	87.12%	-	-
CYUT_2	95.64%	87.49%	-	-
CYUT_3	96.43%	87.88%	-	-
IMNTPU_1	96.18%	88.39%	-	-
JRIRD_2	96.73%	89.55%	89.76%	72.84%
IMNTPU_2	96.73%	89.86%	-	-
JRIRD_1	97.15%	90.80%	89.68%	72.94%
JRIRD_3	97.27%	91.03%	89.26%	69.11%

4. Conclusions

We employ the BiLSTM architecture to detect if the target numeral is in or not in claim with multi-task learning of the target numeral category classification. We proposed a certain representation method which can be realized by neural networks to represent the target numeral information. Regretfully, since we do not adopt methods or measures to handle the problem of uneven data distribution, our results are not good and have a big gap between Macro-F1 score and Micro-F1 score. The experimental results show that our model could understand the task through the learning of context semantics.