

CS224N Assignment 3

Kangwei Ling

June 16, 2017

1 A window into NER

- (a) (i.)
- **Papa Johns** make the best pizzas in America.
 - **The Goldman Sachs** are the leading global investment banking, securities and investment management firm.
- (ii.) The word itself might be ambiguous and it may convey different meaning. Thus using features, gives an overall meaning.
- (iii.)
- Part of speech (POS) tags
 - Context words
- (b) (i.)

$$\begin{aligned} \mathbf{e}^{(t)} &: (2w+1)D \\ \mathbf{W} &: (2w+1)DH \\ \mathbf{U} &: HC \end{aligned}$$

(ii.)

$$T \cdot [(2w+1)D + (2w+1)DH + HC + C]$$

(c) `q1_windoq.py`

(d) i. BEST F_1 score:

	P	R	F_1
Entity-level	0.81	0.85	0.83

Confusion Matrix

Table 1: My caption

go\gu	Per	Org	Loc	Misc	O
PER	2937.00	60.00	81.00	17.00	54.00
ORG	129.00	1671.00	117.00	57.00	118.00
LOC	39.00	107.00	1861.00	32.00	55.00
MISC	35.00	72.00	43.00	1011.00	107.00
O	38.00	55.00	19.00	30.00	42617.00

Mostly the model makes mistakes by recognizing PER as LOC, ORG as PER, LOC as ORG.

ii. The training data is skewed, as most of the words are O.

- Misclassification of ORG as PER

x : Papa Johns make the best pizzas in America.

y*: ORG ORG 0 0 0 0 0 LOC

y': PER PER 0 0 0 0 0 LOC

- Misclassification of LOC as PER

x : Washington was humble.

y*: PER 0 0

y': LOC 0 0