Summary

1. Entity in Centroid (Cosine) vs Entity in Words(Group Average)

Method	**P@1**	**P@2**	**P@3**
WV-P-LC + E-V-C-N10 + T-V-LC + GA	**55.29 %**	**57.86 %**	**62.92 %**
WV-P-LC + E-W-N10 + T-V-LC + GA	53.20 %	57.14 %	61.81 %

2. Type in Vector vs Type in Similar Words

WV-P-LC + E-W-N10 + T-V-LC + GA	**53.20 %**	**57.14 %**	61.81 %
WV-P-LC + E-W-N10 + T-SW30-TV-LC + GA	51.58 %	57.00 %	**63.26 %**

3. Different Word Representations.

WV-P-LC + E-W-N10 + T-SW30-TV-LC + GA	**51.58 %**	**57.00 %**	**63.26 %**
WV-P + E-W-N10 + T-SW30-TV-LC + GA	48.26 %	55.73 %	61.20 %
WV-LC + E-W-N10 + T-SW30-TV-LC + GA	49.72 %	55.90 %	61.00 %

Word Representation Codes

WV-P-LC: **W**ord **V**ector, **L**earned on **C**orpus, Initialized with **P**retrained Glove
WV-P : **W**ord **V**ector, **P**retrained Glove
WV-LC: **W**ord **V**ector, **L**earned on **C**orpus

Entity Representation Codes

E-V-C-N10: **E**ntity in **V**ector form, **C**entroid of **N**earby **10** words
E-W-N10: **E**ntity in **W**ords, **N**earby **10** words

Type Representation Codes

T-V-LC: **T**ype in **V**ector form, **L**earned on **C**orpus
T-SW30-TV-LC: **T**ype in **S**imilar **30** **W**ords to **T**ype **V**ector, **L**earned on **C**orpus

Ranking Entity Against Role Metrics

COS: **COS**ine distance
GA: **G**roup **A**verage

Configuration#1.1: WV-P-LC + E-V-C-N10 + T-V-LC + COS

Corpus Preprocessing: None
Word Representation: Word vectors trained on corpus initializing with pretrained vector
Entity Context Window: Left 10 words, Right 10 words
Entity Representation Type: Context words and words in Entity and Entity words Centroid
Type Representation: Learned vector by replacing entities by tag where words are initialized with pretrained vector
Ranking mechanism: and cosine distance with Type vector

Results:

Role	**Precision@1**	**Precision@2**	**Precision@3**
LOC_Event	68.78 %	66.93 %	67.19 %
LOC_Accused	28.12 %	29.69 %	33.33 %
LOC_Victim	16.66 %	20.83 %	36.11 %
LOC_Others	59.50 %	61.00 %	63.33 %
ORG_Accused	67.89 %	73.39 %	75.23 %
ORG_Victim	40.00 %	53.33 %	53.33 %
ORG_Others	76.00 %	80.75 %	85.50 %
PER_Victim	59.37 %	57.81 %	65.62 %
PER_Others	85.79 %	84.66 %	84.47 %
PER_Accused	50.79 %	53.17 %	65.08 %
Average	**55.29 %**	**57.86 %**	**62.92 %**

Configuration#1.2: WV-P-LC + E-V-C-N10 + T-V-LC + GA

Corpus Preprocessing: None
Word Representation: Word vectors trained on corpus initializing with pretrained vector
Entity Context Window: Left 10 words, Right 10 words
Entity Representation Type: Context words and words in Entity and Entity words Centroid
Type Representation: Learned vector by replacing entities by tag where words are initialized with pretrained vector
Ranking mechanism: Group Average

Results:

Role	**Precision@1**	**Precision@2**	**Precision@3**
LOC_Event	68.78 %	66.93 %	67.19 %
LOC_Accused	28.12 %	29.69 %	33.33 %
LOC_Victim	16.66 %	20.83 %	36.11 %
LOC_Others	59.50 %	61.00 %	63.33 %
ORG_Accused	67.89 %	73.39 %	75.23 %
ORG_Victim	40.00 %	53.33 %	53.33 %
ORG_Others	76.00 %	80.75 %	85.50 %
PER_Victim	59.37 %	57.81 %	65.62 %
PER_Others	85.79 %	84.66 %	84.47 %
PER_Accused	50.79 %	53.17 %	65.08 %
Average	**55.29 %**	**57.86 %**	**62.92 %**

Configuration#2: WV-P-LC + E-W-N10 + T-V-LC + GA

Corpus Preprocessing: None
Word Representation: Word vectors trained on corpus initializing with pretrained vector
Entity Context Window: Left 10 words, Right 10 words
Entity Representation Type: Context words and words in Entity
Type Representation: Learned vector by replacing entities by tag where words are initialized with pretrained vector
Ranking mechanism: Goup average agglomative among Entity word vector and Type vector

Results:

Role	**Precision@1**	**Precision@2**	**Precision@3**
LOC_Event	44.97 %	52.64 %	58.20 %
LOC_Accused	28.13 %	23.44 %	27.08 %
LOC_Victim	41.67 %	37.50 %	47.22 %
LOC_Others	64.50 %	64.50 %	67.50 %
ORG_Accused	50.46 %	59.17 %	65.74 %
ORG_Victim	40.00 %	56.67 %	62.22 %
ORG_Others	79.00 %	81.25 %	83.33 %
PER_Victim	37.50 %	51.63 %	56.25 %
PER_Others	80.68 %	82.67 %	83.33 %
PER_Accused	65.08 %	61.90 %	67.19 %
Average	**53.20 %**	**57.14 %**	**61.81 %**

Configuration#3.1: WV-P-LC + E-W-N10 + T-SW30-TV-LC + GA

Corpus Preprocessing: None
Word Representation: Word vectors trained on corpus initializing with pretrained vector
Entity Context Window: Left 10 words, Right 10 words
Entity Representation Type: Context words and words in Entity
Type Representation: 30 Similar words to the learned type vector by replacing entities by tag where words are initialized with pretrained vector
Ranking mechanism: Goup average agglomative among Entity word vector and Type vector

Results:

Role	**Precision@1**	**Precision@2**	**Precision@3**
LOC_Event	50.26 %	56.34 %	59.79 %
LOC_Accused	09.38 %	17.19 %	26.04 %
LOC_Victim	33.33 %	37.50 %	27.78 %
LOC_Others	66.00 %	70.25 %	68.66 %
ORG_Accused	61.47 %	69.27 %	60.86 %
ORG_Victim	33.33 %	46.67 %	73.33 %
ORG_Others	78.00 %	82.00 %	85.33 %
PER_Victim	50.00 %	48.44 %	65.62 %
PER_Others	86.36 %	84.37 %	86.36 %
PER_Accused	47.62 %	57.94 %	58.20 %
Average	**51.58 %**	**57.00 %**	**63.26 %**

Configuration#3.2 WV-P + E-W-N10 + T-SW30-TV-LC + GA

Word Representation: Word vectors pretrained. If word not present initialize with 0 vector

Results:

Role	**Precision@1**	**Precision@2**	**Precision@3**
LOC_Event	53.97 %	56.08 %	59.79 %
LOC_Accused	12.50 %	23.44 %	26.04 %
LOC_Victim	16.67 %	20.83 %	27.78 %
LOC_Others	60.50 %	65.00 %	68.67 %
ORG_Accused	51.38 %	56.42 %	60.86 %
ORG_Victim	26.67 %	60.00 %	73.33 %
ORG_Others	78.00 %	81.75 %	85.33 %
PER_Victim	53.12 %	56.25 %	65.62 %
PER_Others	85.23 %	84.34 %	86.36 %
PER_Accused	44.44 %	53.17 %	58.20 %
Average	**48.26 %**	**55.73 %**	**61.20 %**

Configuration#3.3 WV-LC + E-W-N10 + T-SW30-TV-LC + GA

Word Representation: Word vectors trained on corpus using 1-hot vector. If word not present initialize with 0 vector

Results:

Role	**Precision@1**	**Precision@2**	**Precision@3**
LOC_Event	47.61 %	56.35 %	62.08 %
LOC_Accused	09.37 %	17.19 %	15.62 %
LOC_Victim	16.67 %	33.33 %	44.44 %
LOC_Others	68.50 %	63.75 %	66.50 %
ORG_Accused	52.29 %	61.93 %	68.81 %
ORG_Victim	40.00 %	50.00 %	62.22 %
ORG_Others	77.50 %	79.75 %	81.33 %
PER_Victim	50.00 %	56.25 %	62.50 %
PER_Others	84.66 %	84.94 %	85.23 %
PER_Accused	47.62 %	55.55 %	61.90 %
Average	**49.72 %**	**55.90 %**	**61.00 %**