

Supplementary for RESIDE: Improving Distantly-Supervised Neural Relation Extraction using Side Information

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1 Hyperparameters

We use the same hyperparameters on both Riedel (Riedel et al., 2010) and GDS (Jat et al., 2018) datasets. For model selection, we randomly took 20% of the Riedel training data as validation set. In GDS, we use the standard splits as provided by (Jat et al., 2018). A detailed description of the datasets is given in the main paper. We tune them using the validation sets. Grid search was used to determine the optimal parameters. For token representation, we use GloVe (Pennington et al., 2014) embeddings and positional embeddings. Adam optimizer (Kingma and Ba, 2014) was used for training the network. The detailed hyperparameters are given in Table 1.

Hyperparameter	Value
Word Embedding Size	50
Position Embedding Size	16
Hidden State Dimension of Bi-GRU	192
Layers in GCN	1
Hidden State Dimension of GCN	16
Matched Relation Embedding Size	32
Entity Type Embedding Size	50
Batch Size	32
Dropout	0.8
Maximum Epochs	10
Learning Rate of Optimizer	0.001
Regularization Parameter	0.0001

Table 1: Details of hyperparameters used.

2 Relation Aliases

For some of the relations in Riedel dataset, the list of aliases extracted from Wikidata (Vrandečić and Kröttsch, 2014) are presented in Table 2. The

mapping for all 52 relations is included in the supplementary code.

References

- S. Jat, S. Khandelwal, and P. Talukdar. 2018. Improving Distantly Supervised Relation Extraction using Word and Entity Based Attention. *ArXiv e-prints*.
- Diederik P. Kingma and Jimmy Ba. 2014. Adam: A method for stochastic optimization. *CoRR*, abs/1412.6980.
- Jeffrey Pennington, Richard Socher, and Christopher D. Manning. 2014. Glove: Global vectors for word representation. In *Empirical Methods in Natural Language Processing (EMNLP)*, pages 1532–1543.
- Sebastian Riedel, Limin Yao, and Andrew McCallum. 2010. Modeling relations and their mentions without labeled text. In *Joint European Conference on Machine Learning and Knowledge Discovery in Databases*, pages 148–163. Springer.
- Denny Vrandečić and Markus Kröttsch. 2014. Wikidata: A free collaborative knowledgebase. *Commun. ACM*, 57(10):78–85.

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Riedel Relation	Relation Aliases
<i>/business/company/place_founded</i>	place of formation originates from formation location source location comes from location of formation founded in
<i>/business/company/major_shareholders</i>	stockholders is owned by shareholder provenance belongs to board member business division
<i>/location/country/capital</i>	principal place administrative headquarters capital city capital administrative centre capital town chef-lieu capital of

Table 2: Some examples of relation alias for the relations in Riedel dataset (Riedel et al., 2010), which are used as part of side information in RESIDE.