



Influence of Context in transformer-based Medication Relation Extraction

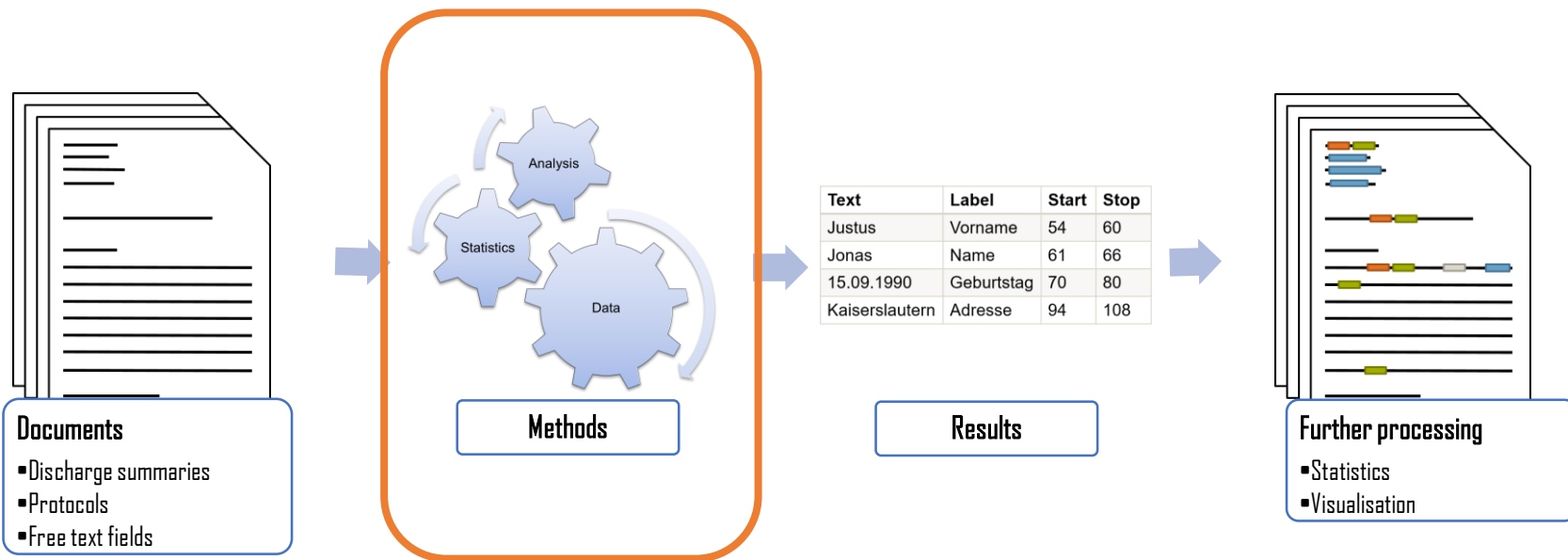
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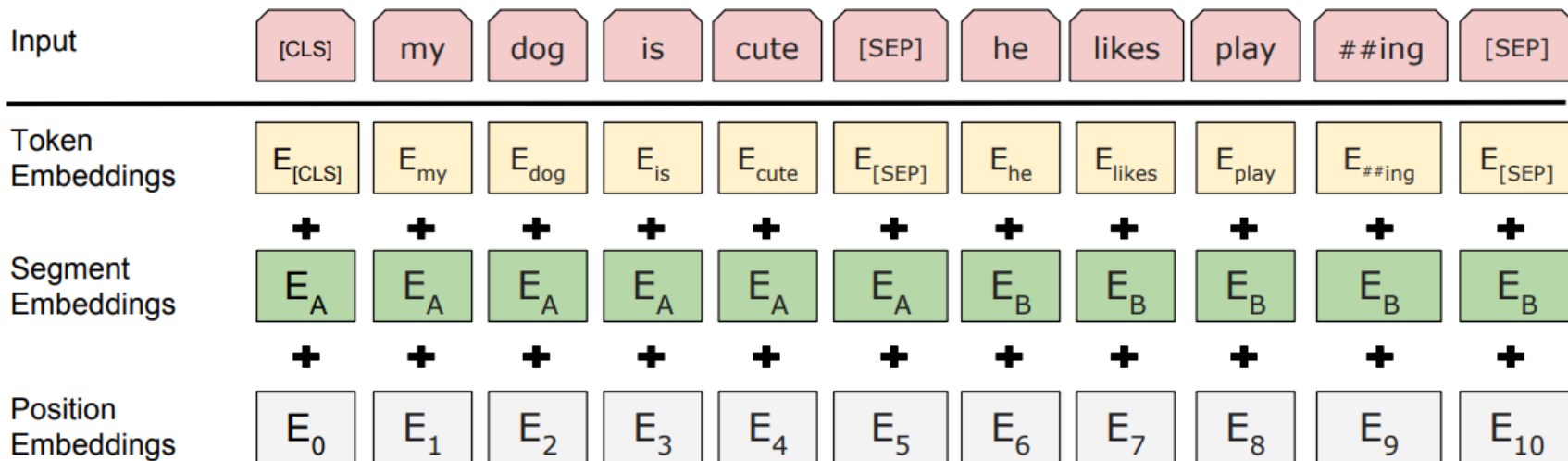


Motivation





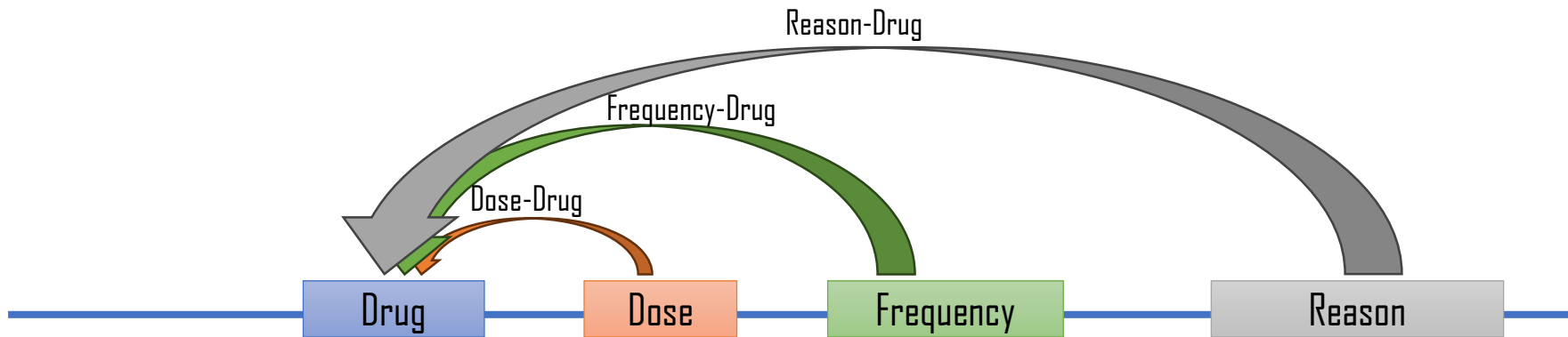
Transformer-based (BERT)



Devlin et al.: BERT: Pre-training of Deep Bidirectional Transformers for Language Understanding; NAACL 2019



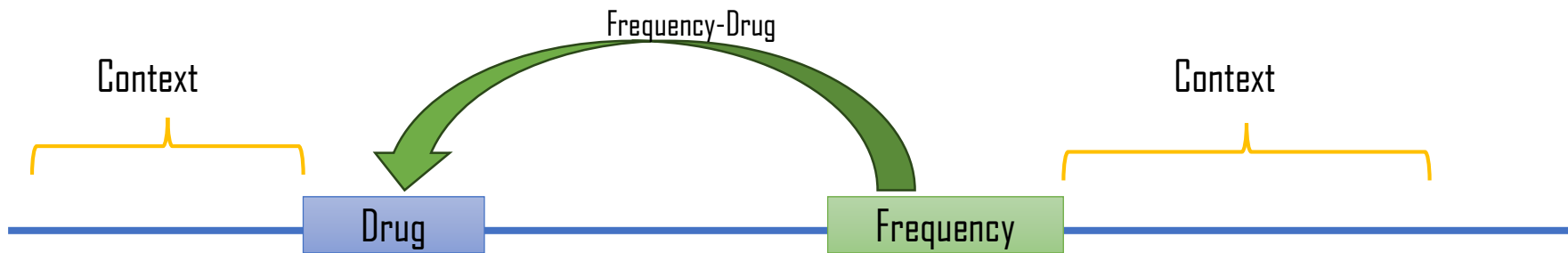
Medication Relation



She reported to have taken ibuprofen 600 mg per day for her lower back pain.



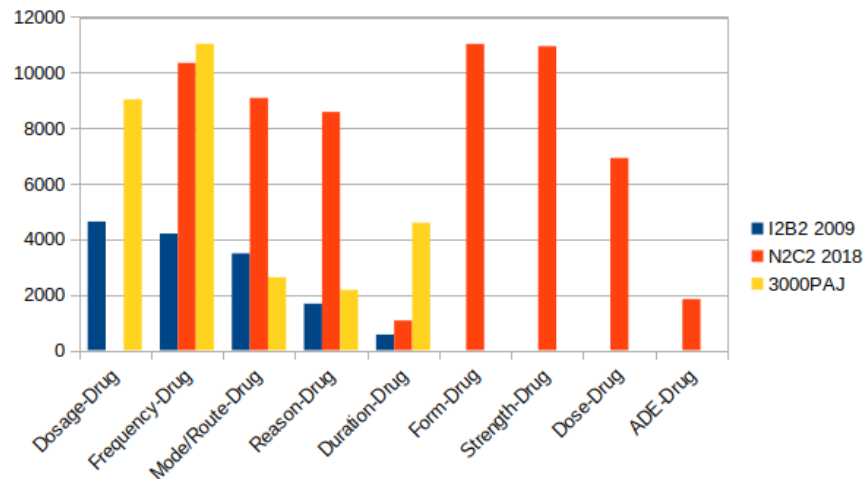
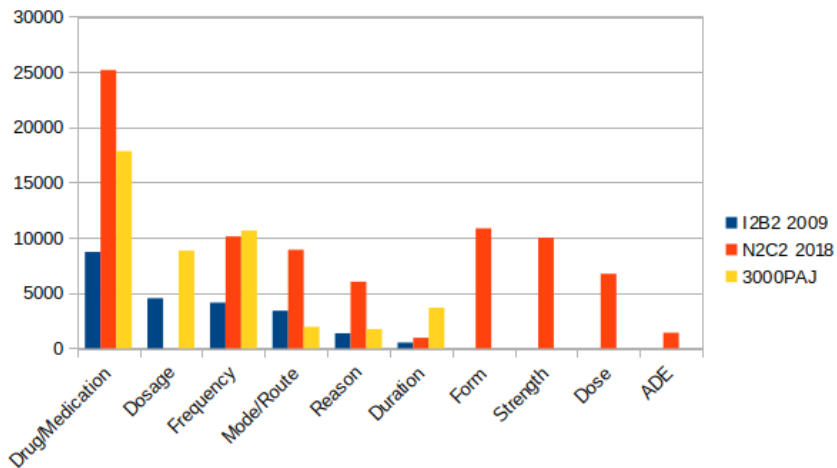
Context



She reported to have taken ibuprofen 600 mg per day for her lower back pain.

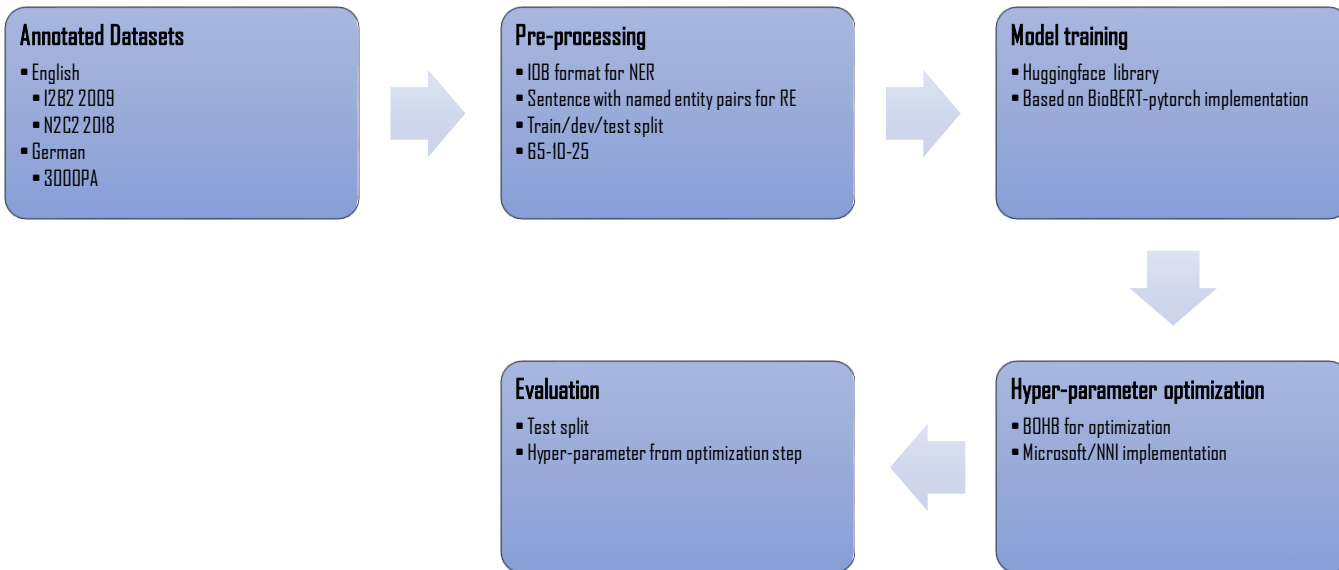


Datasets





Experimental Setup

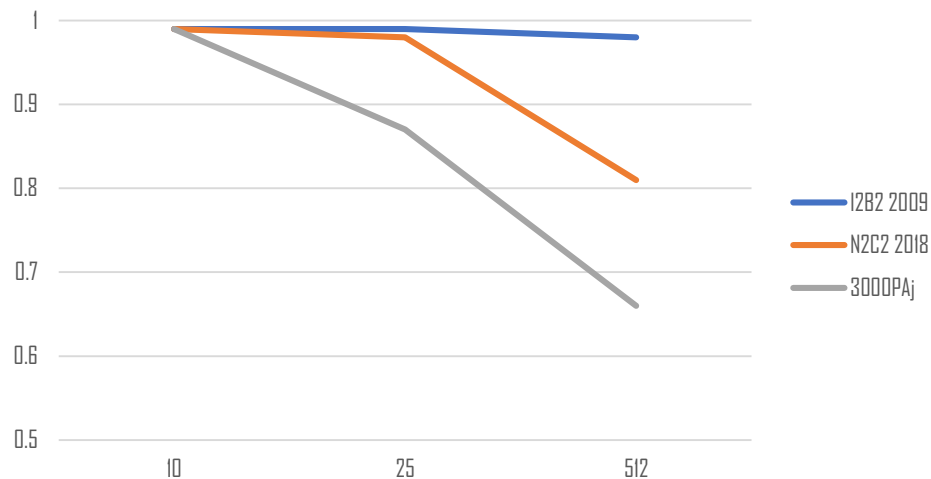




Results

Task	Token distance	I2B2 2009	N2C2 2018	3000PA _J
Entity extraction	512	0.88 (0.87/0.89)	0.93 (0.93/0.93)	0.84 (0.83/0.86)
	10	0.99 (0.99/0.99)	0.99 (0.99/0.99)	0.99 (0.99/0.99)
Relation extraction	25	0.99 (0.99/0.99)	0.98 (0.98/0.99)	0.87 (0.87/0.87)
	512	0.98 (0.98/0.98)	0.81 (0.85/0.79)	0.66 (0.66/0.66)

F1-Score Medication Relation Extraction





Summary and Discussion

- The more is not always the better
- Too much context can negatively influence results
- Indications for being language independent

- Behavior on different tasks unclear
- Effect of context on named entity recognition
- Compare different languages



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