Colex2Lang: Language Embeddings from Semantic Typology

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Overview

Objective

- Investigate the potential of incorporating semantic typology, such as colexifications, to multilingual NLP.

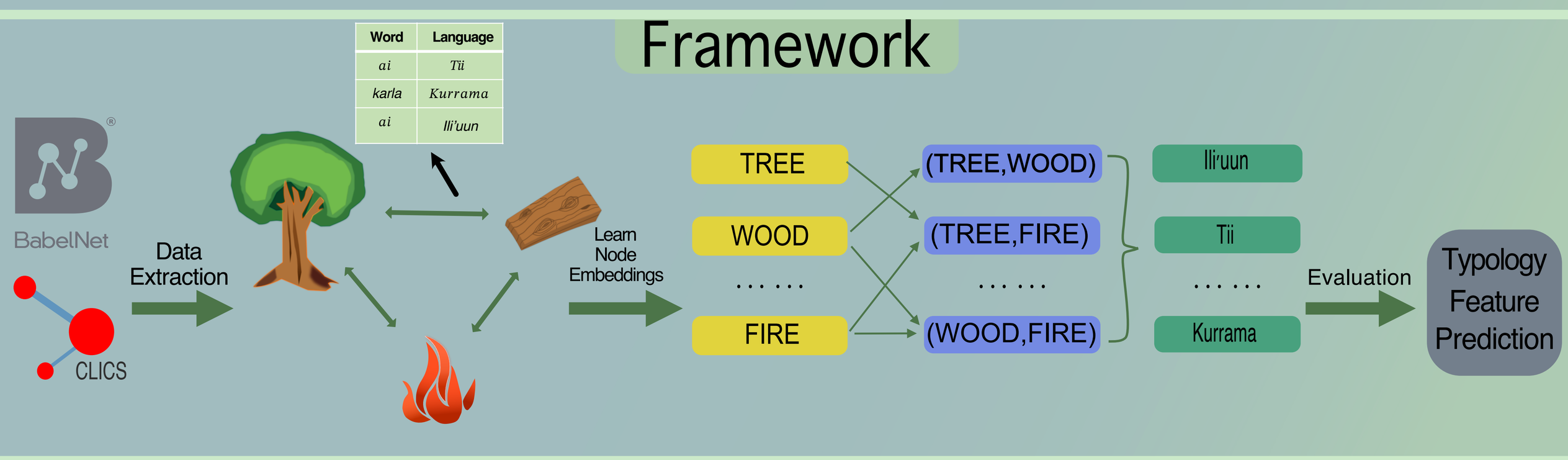
Hypothesis

- Language representations learned from semantic typology encapsulate a distinct language signal

Approach and Evaluation

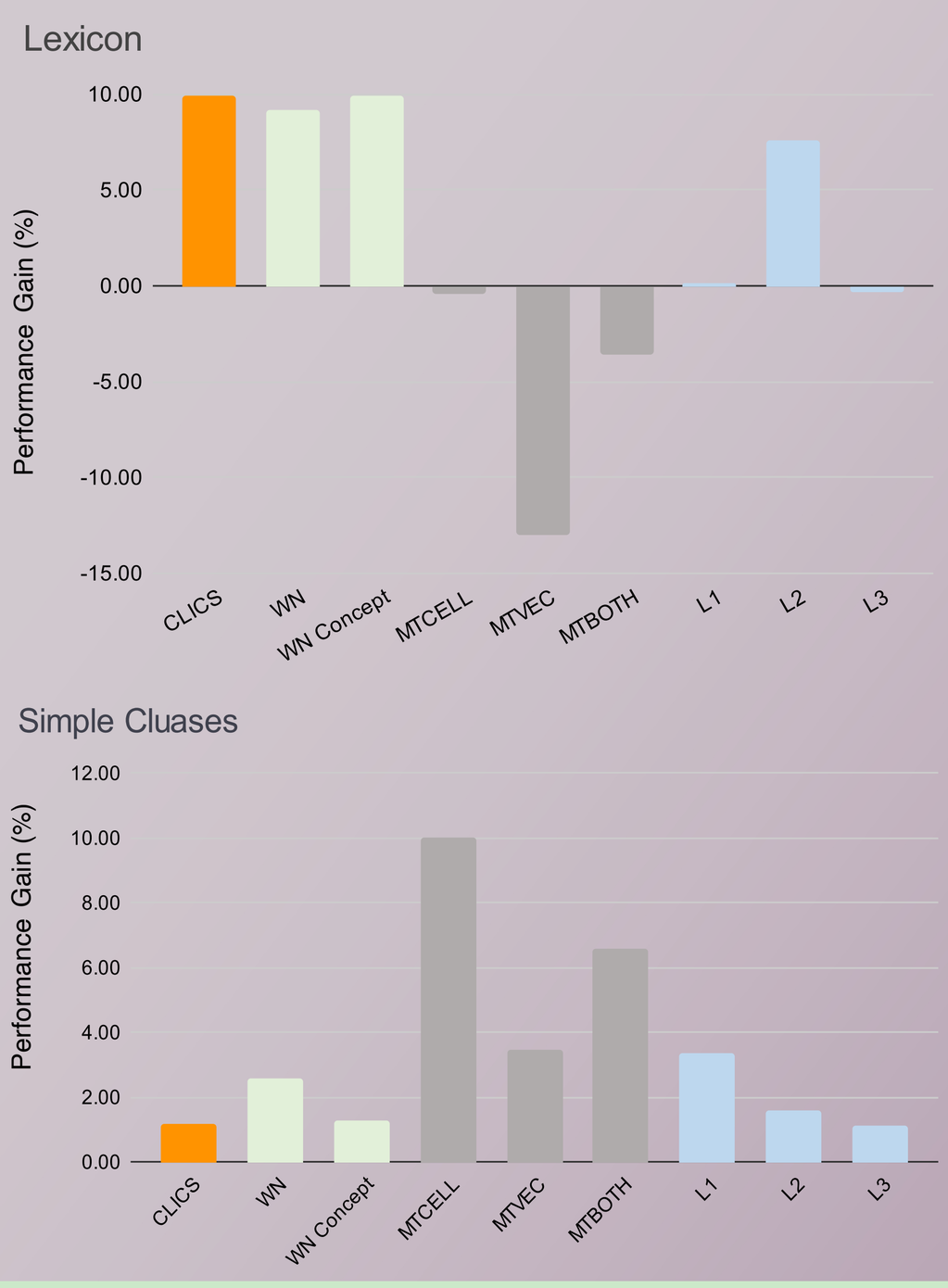
- Build large-scale synset graphs
- Learn synset embeddings using node embedding algorithms
- Construct colexification and language embeddings
- Evaluating the colexification-informed language embeddings using typological feature prediction

Framework

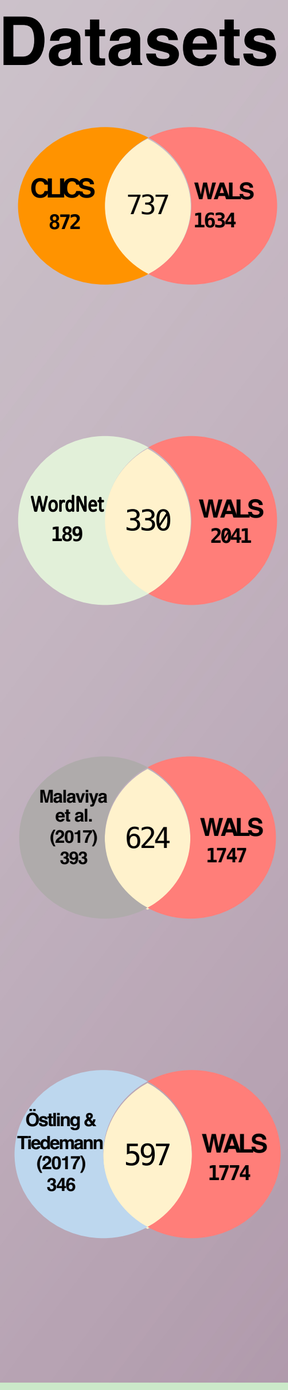


Results

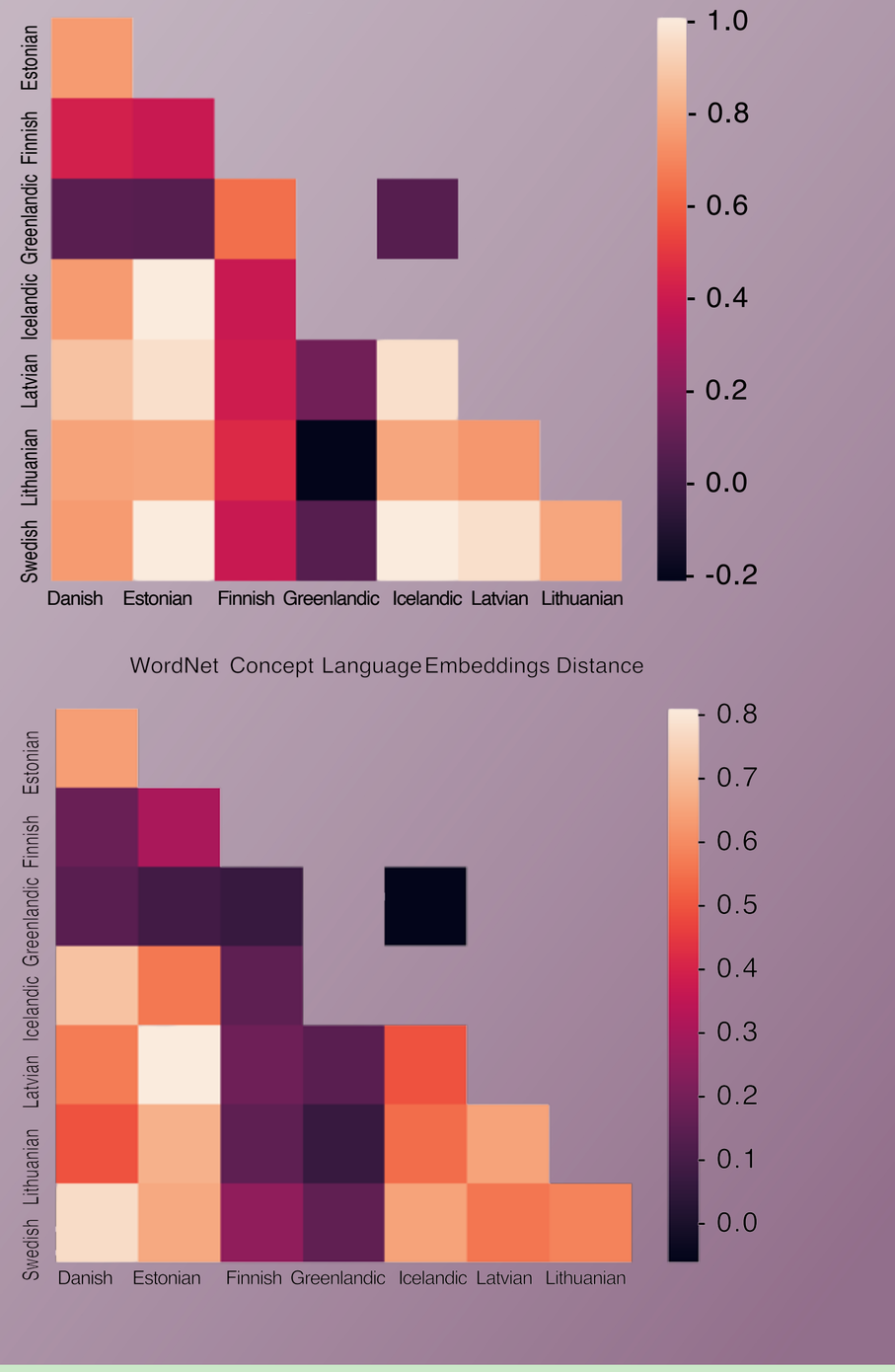
Typological Feature Prediction



Datasets



Language Similarity



Conclusions

Conclusion

- The first attempt to learn language representations and model language similarities using semantic typology at a large-scale

Future Work

- Apply colexification-informed language embeddings to further multilingual tasks and transfer learning from high-resource to low-resource languages

References

Y. Chen, R. Biswas, J. Bjerva, 2023, Colex2Lang: Language Embeddings from Semantic Typology. *Proceedings of the 24th Nordic Conference on Computational Linguistics (NoDaLiDa).*

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