Introduction to Computational Linguistics
UBG Parsing Exercises

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1 Subsumption

Define (in pseudocode or implemented) a subsumption algorithm for (typed) feature structures. Assume the function `subsumes(type0, type1)` to be given.

2 Parsing

Modify a chart parsing algorithm to deal with unification-based grammars (with subsumption packing) and discuss points of inefficiency. Try to present a solution in pseudo-code. Assume the lexicon lookup, returning strings for input words, to be given.

References

[1] Bob Carpenter. *The Logic of Typed Feature Structures.* Tracts in Theoretical Computer Science. Cambridge University Press, Cambridge, 1992.

[2] Ann Copestake. *Implementing typed feature structure grammars.* CSLI Lecture Notes, December 2001.

[3] Bernd Kiefer, Hans-Ulrich Krieger, John Carroll, and Rob Malouf. A bag of useful techniques for efficient and robust parsing. In *Proceedings of the 37th annual meeting of the Association for Computational Linguistics on Computational Linguistics*, pages 473–480, Morristown, NJ, USA, 1999. Association for Computational Linguistics.

[4] Stuart M. Shieber. *An Introduction to Unification-Based Approaches to Grammar.* CSLI Lecture Notes, Number 4. Center for the Study of Language and Information, Stanford, 1986.