

## Neural Networks applied in NLP

### Lab 4

Get familiar with syntactic and dependency parsing by generating the corresponding trees for the following sentences:

*Flying planes can be dangerous.*

*The parents of the bride and the groom were flying.*

*The groom loves dangerous planes more than the bride.*

Steps:

1. (0.25p) Write a suitable grammar, able to correctly parse all sentences, with all their senses. Use as inspiration the grammars discussed in class.
2. (0,25p) Use existing modules to extract phrase structure trees for these sentences using your grammar.
3. (0.25p) Implement a dependency parser (using, for instance, spaCY, NLTK or Stanza) and parse the three sentences above.
4. (0,25p) Describe an application which needs syntactic and/or dependency parsing. Explain briefly why. (1/2 pag.)

Bonus (0,25p)

- Write a program which transforms a Context Free Grammar, as the one discussed in class, into a Chomsky Normal Form grammar, also converting the probabilities.