Final Assignment Presentation

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Using Stanford Parser to obtain CP and DP

Sentence: He teaches my daughter Physics

Constituency Parse(CP)	Dependency Parse(DP)
(ROOT (S (NP (PRP He)) (VP (VBZ teaches) (NP (PRP$ my) (NN daughter) (NN Physics)))))	[(('teaches', 'VBZ'), 'nsubj', ('He', 'PRP')), (('teaches', 'VBZ'), 'obj', ('Physics', 'NN')), (('Physics', 'NN'), 'nmod:poss', ('my', 'PRP$')), (('Physics', 'NN'), 'compound', ('daughter', 'NN'))]

Link to our code for the assignment:
https://drive.google.com/drive/folders/1JU8X9aGkJcw7SeO9NZQgklj6JtIVoZVw?usp=sharing

CP-DP

Summary:

Tree:

- Recursion from small to larger phrases.
- Find the head of the phrase.

Labelling:

- Based on simple grammatical rules from the PoS tags obtained from the CP

DP-CP

Work based on the paper:
http://cdn.iiit.ac.in/cdn/ltrc.iiit.ac.in/hutb_release/related_publications/Towards_a_Multi-Representational_Treebank.pdf

Tree:

- Generate the phrase (shuffled words though based on the inorder traversal of the DP) to create left and right children based on the index of words.
- Generate phrase trees for children.

Labelling:

- Phrase tag obtained based on the PoS Tag of the head of the dependency parse.

Error Analysis

For CP- DP:

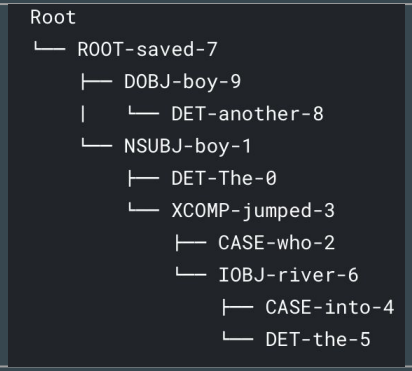
- **Core assumption:** The child to the root is the main verb, which might not be the case in a few examples.
- **Tagging**: In particular, we are facing issues in the tagging of XCOMP.

For DP-CP:

- **Issues In Labelling**: small set of context free grammar -based rules, and generated results based on the structure of the CP tree generated by our model.
- In particular, we have not been able to support **SBAR**.

CP-DP

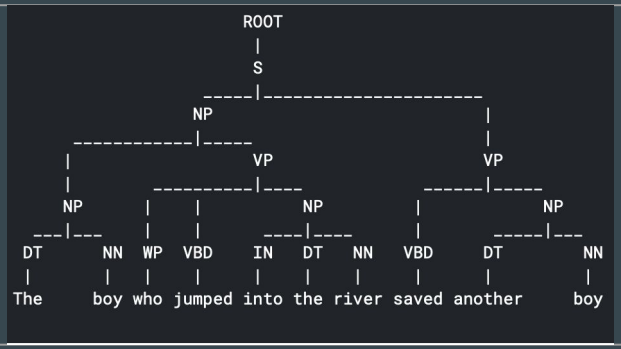
Sentence: The boy who jumped into the river saved another boy

Dependency Parse Using our Model	Dependency Parse (Using Stanford Model)
	[(('saved', 'VBD'), 'nsubj', ('boy', 'NN')), (('boy', 'NN'), 'det', ('The', 'DT')), (('boy', 'NN'), 'acl:relcl', ('jumped', 'VBD')), (('jumped', 'VBD'), 'nsubj', ('who', 'WP')), (('jumped', 'VBD'), 'obl', ('river', 'NN')), (('river', 'NN'), 'case', ('into', 'IN')), (('river', 'NN'), 'det', ('the', 'DT')), (('saved', 'VBD'), 'obj', ('boy', 'NN')), (('boy', 'NN'), 'det', ('another', 'DT'))]

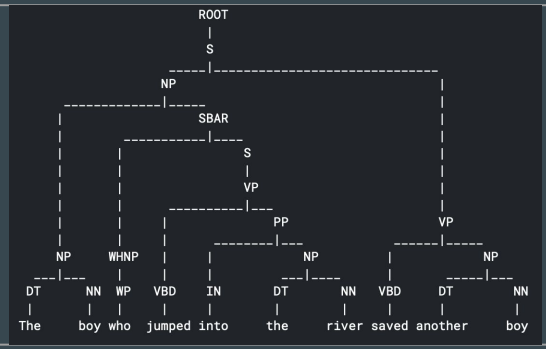
DP-CP

Sentence: The boy who jumped into the river saved another boy

Constituency Parse Using our Model

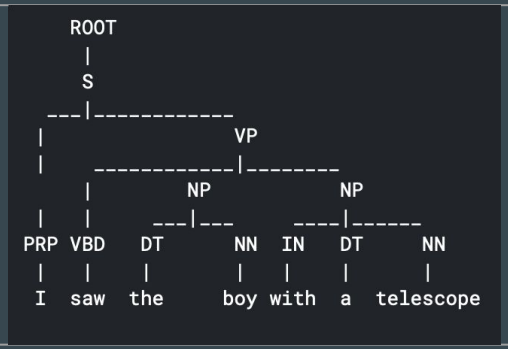
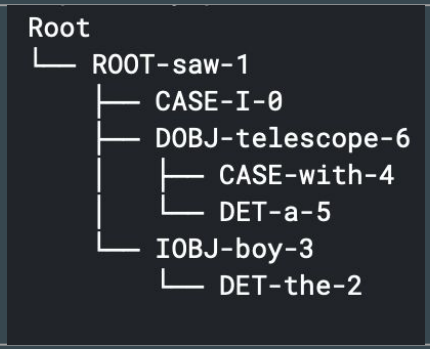


Constituency Parse Using Stanford Parser



Additional Examples

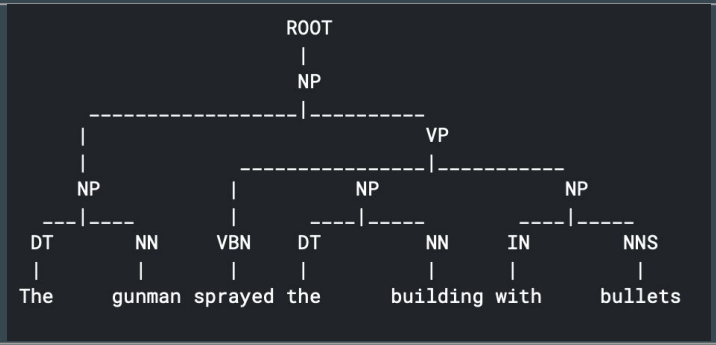
Sentence: I saw the boy with a telescope

Constituency Parse Using our Model	Dependency Parse Using our Model
	

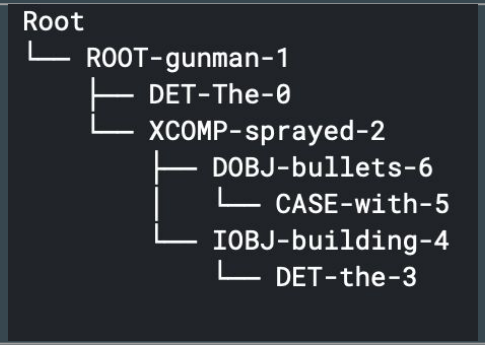
DP-CP

Sentence: The gunman sprayed the building with bullets.

Constituency Parse Using our Model



Dependency Parse Using our Model



Thank You