

Welcome to Report #5:

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Parsing

Part1-CKY Algorithm:

In this part I implemented the CKY algorithm, for grammar in the form of Chomsky Normal, with probabilities.

Building/filling the chart wasn't exactly like the algorithm explained in the lecture, instead of filling it from bottom up, right to left. What I did was change the order of the chart so that 1'st line is all words in sentence of length 1, 2'nd line of length 2 atc...

It's still the same algorithm just made it easier for me to navigate through the chart.

For part of sentence of length 1 (for each word) I saved, in chart, all possible rules that lead to it, then for longer parts of sentence I chose the ones with maximum probability (which is what the algorithm does).

For sentences that didn't end the chart with the start symbol of the given grammar (or without a symbol at all) aren't part of the language.

Part #2:

1) Two possible trees:

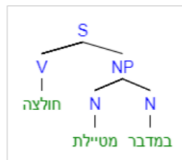
Syntax Tree Generator

[S [V [חולצה]] [NP [N [מטיילת]] [N [במדבר]]]]

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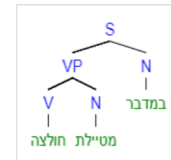
Syntax Tree Generator

[S [VP [V [חולצה]] [N [מטיילת]]]] [N [במדבר]]]

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Grammar:

$S \rightarrow V NP$

$S \rightarrow VP N$

$NP \rightarrow N N$

$VP \rightarrow V N$

2) "Their dates were sweet and ripe."

We first think dates as romantic dates, but it's the fruit.

"Give the crowd a bow, a blue one."

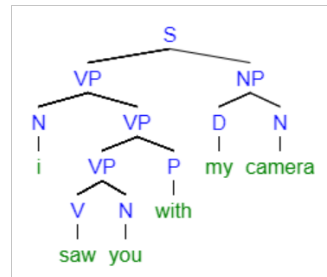
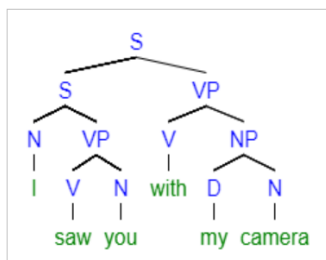
Bow would be a verb to bow, but in this case it's a hair bow.

Extra one: "they were engaged in the movie; they didn't miss any scenes at all."

For all the above sentences, they all have a word that have multiple meanings, and a context that leads you to think about one of it's meaning, but then the context changes so that another meaning of the word would make more sense, or at least that's what I tried to do.

3) "I saw you with my camera."

Syntax Tree Generator	Syntax Tree Generator
<div>[S [S [N I][VP [V saw][N you]]][VP [V with][NP [D my][N camera]]]</div>	<div>[S [VP [N i][VP [VP [V saw][N you]]][P with]]][NP [D my][N camera]]]</div>
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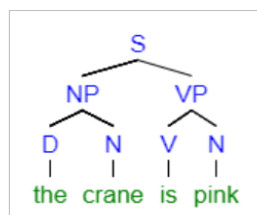


This line is similar to the line "ראיתי את האיש עם המשקפת."

"with" could mean "using" or as you had my camera with you.

"The crane is pink" crane= the bird or crane= the truck

Syntax Tree Generator
<div>[S [NP [D the][N crane]] [VP [V is][N pink]]]</div>
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Thank you for reading!

Have a nice day, and end of semester!!

