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CS 4395
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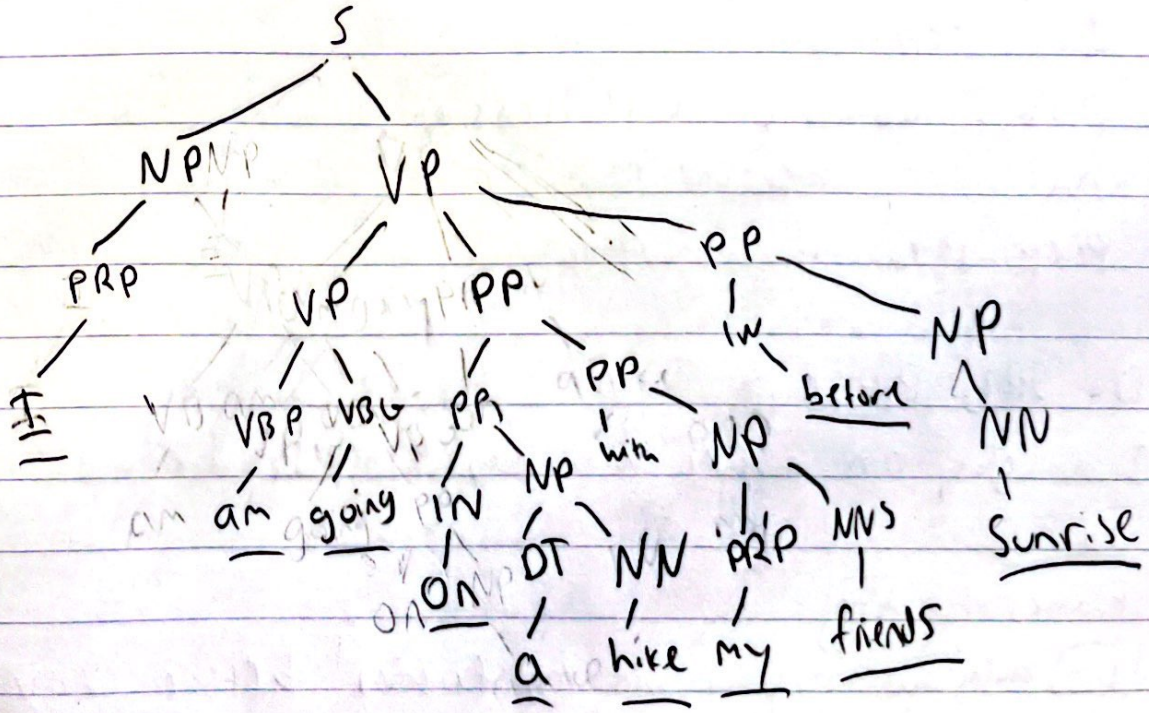
Sentence parsing

1) Write a fairly complex sentence of at least 12 tokens

I am going on a hike with my friends before Sunrise.

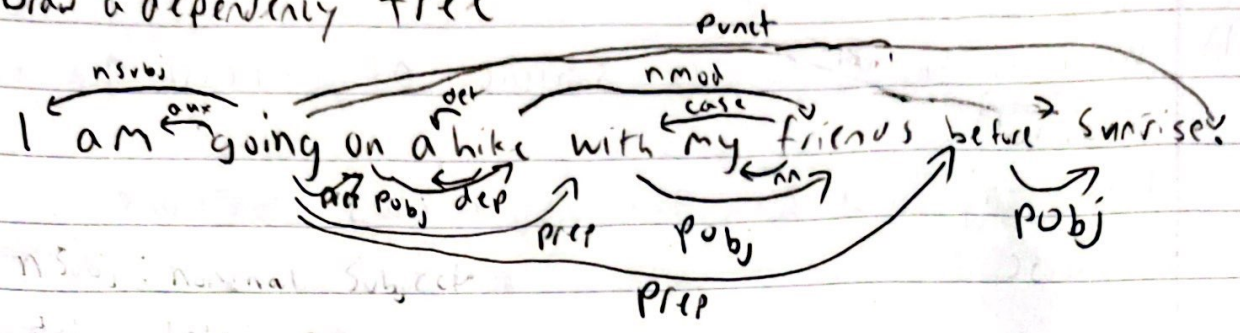
2) Draw a PSG tree, labeling POS and defining Phrase terms



Terms:

NP: Noun Phrase
PRP: Possessive pronoun
VBP: Verb, non 3rd singular present
VBG: Verb, gerund, or Present
IN: Preposition or Subordinating Conjunction
NN: Noun singular or mass
NNS: Plural Noun
DT: Determiner
PP: Prepositional Phrase

3) Draw a dependency tree



aux: auxillary
Punct: punctuation
nSubj: nominal Subject
dep: dependent
pobj: object of a possession
nn: noun compound modifier
prep: Prepositional modifier

4. Do SRL Parse

I am going on a hike with my friends before Sunrise.

Frames for AM

I AM going on a hike with my friends before Sunrise

Frame for going

I — Arg 0
am — AM
going — V
on a hike — arg 1
with my friends — Arg-Com
before Sunrise. — ARG-TMP

Arg 0 (I) is the agent, the one performing the action
Arg 1 (on a hike) is the passive actor that is acted upon by arg 0
ARGM-COM (with my friends) - indicating accompaniment
ARGM-TMP is time when action is happening.

(5) Compare and Contrast Syntax parsers

PS G trees or Constituency parsing serves as a good way to visualize the structure of a sentence however it faces an issue of structural ambiguity and can be difficult to interpret its meaning
Dependency Parsing serves as a great way to see how words relate to each other rather than breaking down each individual word. However, the disadvantage of dependency parsing is that it can output undesired results if POS tagged incorrectly. SRL or Semantic Role Labeling does an excellent job in analyzing relationships between words in a sentence however it needs much more training data to compute with high confidence which can be expensive.