Supplementary Material for "Dependency-based Hybrid Trees for Semantic Parsing"

Zhanming Jie and **Wei Lu**

Singapore University of Technology and Design

8 Somapah Road, Singapore, 487372

`zhanming_jie@mymail.sutd.edu.sg`, `luwei@sutd.edu.sg`

Abstract

This supplementary material provides the further details to the dynamic programming derivations in the main paper (Jie and Lu, 2018).

1 Complete Derivation

We show the complete dynamic-programming derivation of the example in our main paper. First of all, Figure 1 shows the derivation of each dynamic programming structure.
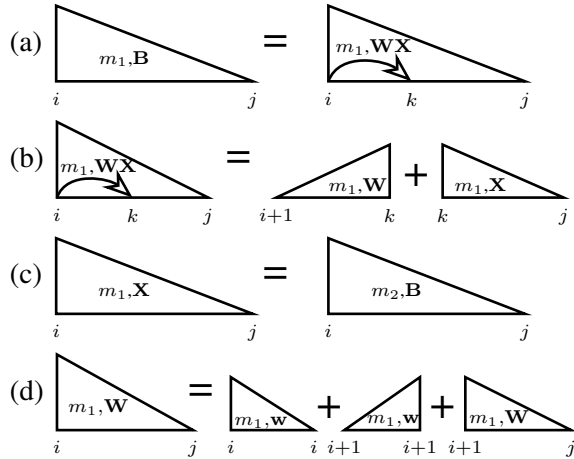

Figure 1: The dynamic-programing structures and derivation of our model. The other direction is symmetric.

Following the derivation, we can compose the tree by combining the smaller spans into bigger spans. Figure 2 and 3 show the complete derivation of the example in the Figure 1 of the main paper. During the decoding phase, we obtain such tree structures as shown in Figure 2 and 3 through a Viterbi procedure. By retrieving the complete arc spans spans in this structure, we can obtain the predicted dependency-based hybrid tree representation which contains the meaning representation.

References

Zhanming Jie and Wei Lu. 2018. Dependency-based hybrid trees for semantic parsing. In *Proceedings of EMNLP*.

Sentence: *What rivers do not run through Tennessee ?*

Meaning Representation: $answer(exclude(river(all), traverse(stateid('tn'))))$

Dependency-based Hybrid Tree Representation
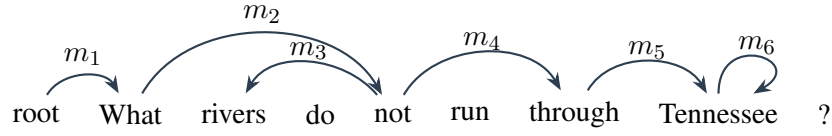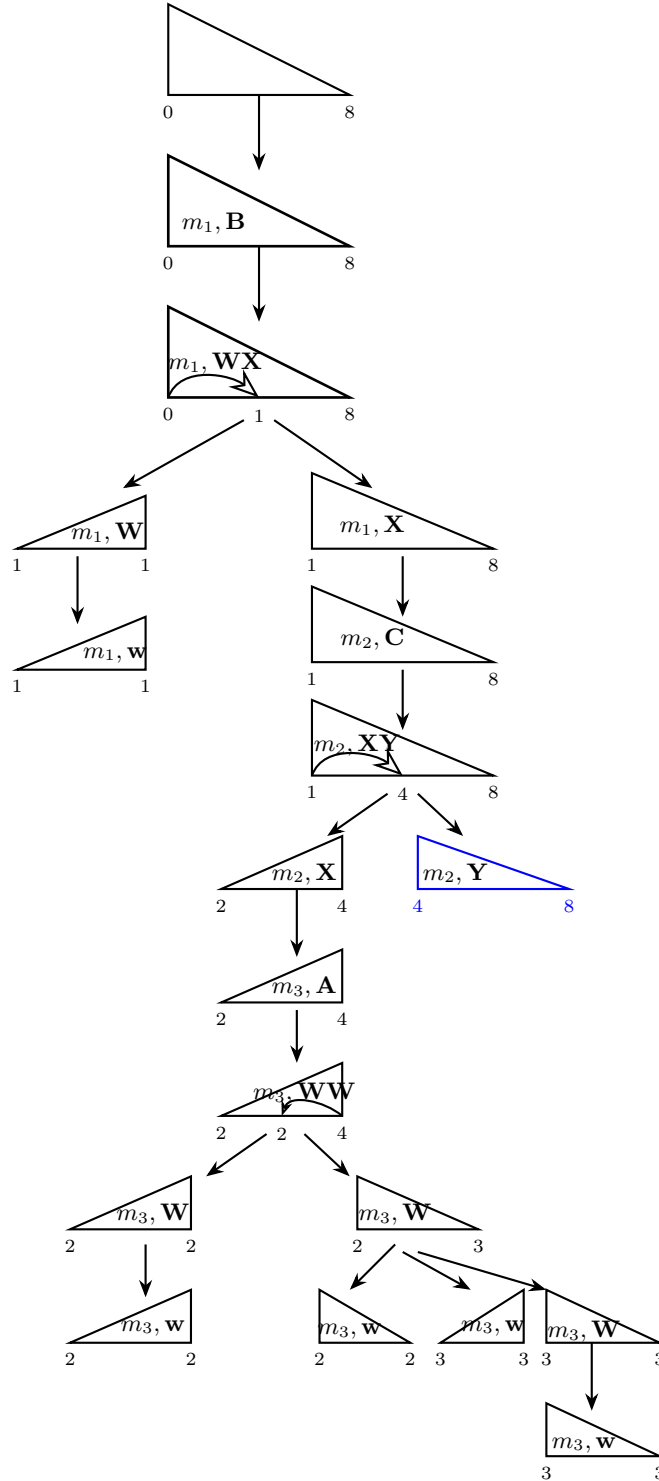

Dynamic-programming Derivation

Figure 2: Complete dynamic programming example of the example in the main paper. Derivation for span $(4, 8)$ is shown in Figure 3 due to space limit.
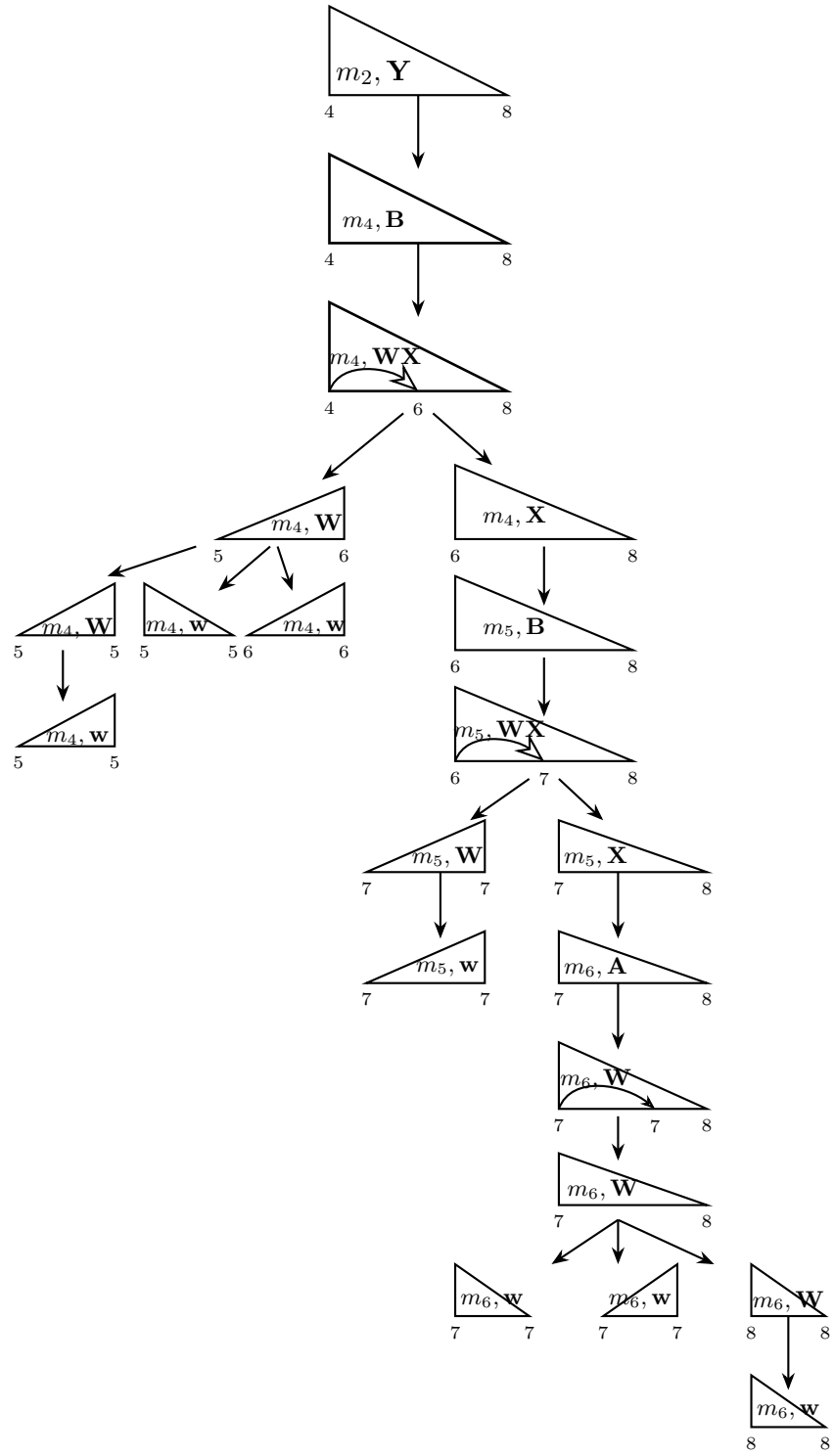
Figure 3: Derivation of span $(4, 8)$ in Figure 2