

# Constraints

$$D_1(\text{cowboy}) \wedge D_2(\text{dog}) \wedge (D_3(\text{play music}) \vee D_4(\text{plays music})) \wedge (D_5(\text{catch}) \vee D_6(\text{catches}))$$

search tree		likelihood	clauses	score	select	notation
<div> <div>The</div> <div> <div>dog</div> <div>man</div> <div>cowboy</div> </div> </div>	<div> <div>①</div> <div>runs</div> </div>	0.18	<div><div></div><div></div><div></div><div></div></div>	$0.18 + 0.1 * 0 = \underline{0.18}$	✓	<p><div><div></div><div></div><div></div><div></div></div> denotes the state for <math>C_1, C_2, C_3, C_4</math> separately, <div><div></div><div></div><div></div><div></div></div> indicates <math>C_i</math> is irreversibly stratified, <div><div></div><div></div><div></div><div></div></div> otherwise.</p> <p><b>Pruning step:</b>  <div><div></div><div></div><div></div><div></div></div> denotes failure in top-<math>\alpha</math> filtering in term of likelihood, <div><div></div><div></div><div></div><div></div></div> denotes failure in top-<math>\beta</math> filtering in term of number of satisfied clauses</p> <p><b>Grouping step:</b>  <div>①</div><div>②</div><div>③</div><div>④</div> denotes candidate groups based on the shared set of irreversibly satisfied clauses</p> <p><b>Selecting step:</b>  <div><div></div><div></div><div></div><div></div></div> denotes the top-1 candidate within each group ranked by score function. Among these candidates, we select ✓ the top-k ones to fill in the next beam.</p>
	<div> <div>②</div> <div>catches</div> </div>	0.12	<div><div></div><div></div><div></div><div></div></div>	$0.12 + 0.1 * 0 = \underline{0.12}$	✓	
	<div> <div><del>plays</del></div> </div>	<del>0.05</del>	<div><div></div><div></div><div></div><div></div></div>			
	<div> <div><del>eats</del></div> </div>	0.20	<div><div></div><div></div><div></div><div></div></div>			
	<div> <div><del>plays</del></div> </div>	0.19	<div><div></div><div></div><div></div><div></div></div>			
	<div> <div><del>talks</del></div> </div>	0.16	<div><div></div><div></div><div></div><div></div></div>			
	<div> <div>③</div> <div>talks</div> </div>	0.15	<div><div></div><div></div><div></div><div></div></div>	$0.15 + 0.1 * 0 = \underline{0.15}$		
	<div> <div>④</div> <div>plays</div> </div>	0.11	<div><div></div><div></div><div></div><div></div></div>	$0.11 + 0.1 * \frac{1}{2} = \underline{0.16}$	✓	
	<div> <div>catches</div> </div>	0.09	<div><div></div><div></div><div></div><div></div></div>	$0.09 + 0.1 * 0 = \underline{0.09}$		

t = 0

t = 1

t = 2