Parsing

PARSING is finding the most probable constituency tree:

$$\hat{T} = \underset{T \in \{\text{trees of sentence } s\}}{\operatorname{argmax}} p(T|s) \tag{3}$$

CKY (CYK) algorithm for $O(n^3)$ parsing. ("dynamic programming"):

length:							
7	S						
6		VP					
5							
4	S						
3		VP			PP		
2	S		NP			NP	
1	NP	V, VP	Det	N	P	Det	N
	$_0$she$_1$	$_1$eats$_2$	$_2$a$_3$	$_3$fish$_4$	$_4$with$_5$	$_6$a$_6$	$_6$fork$_7$