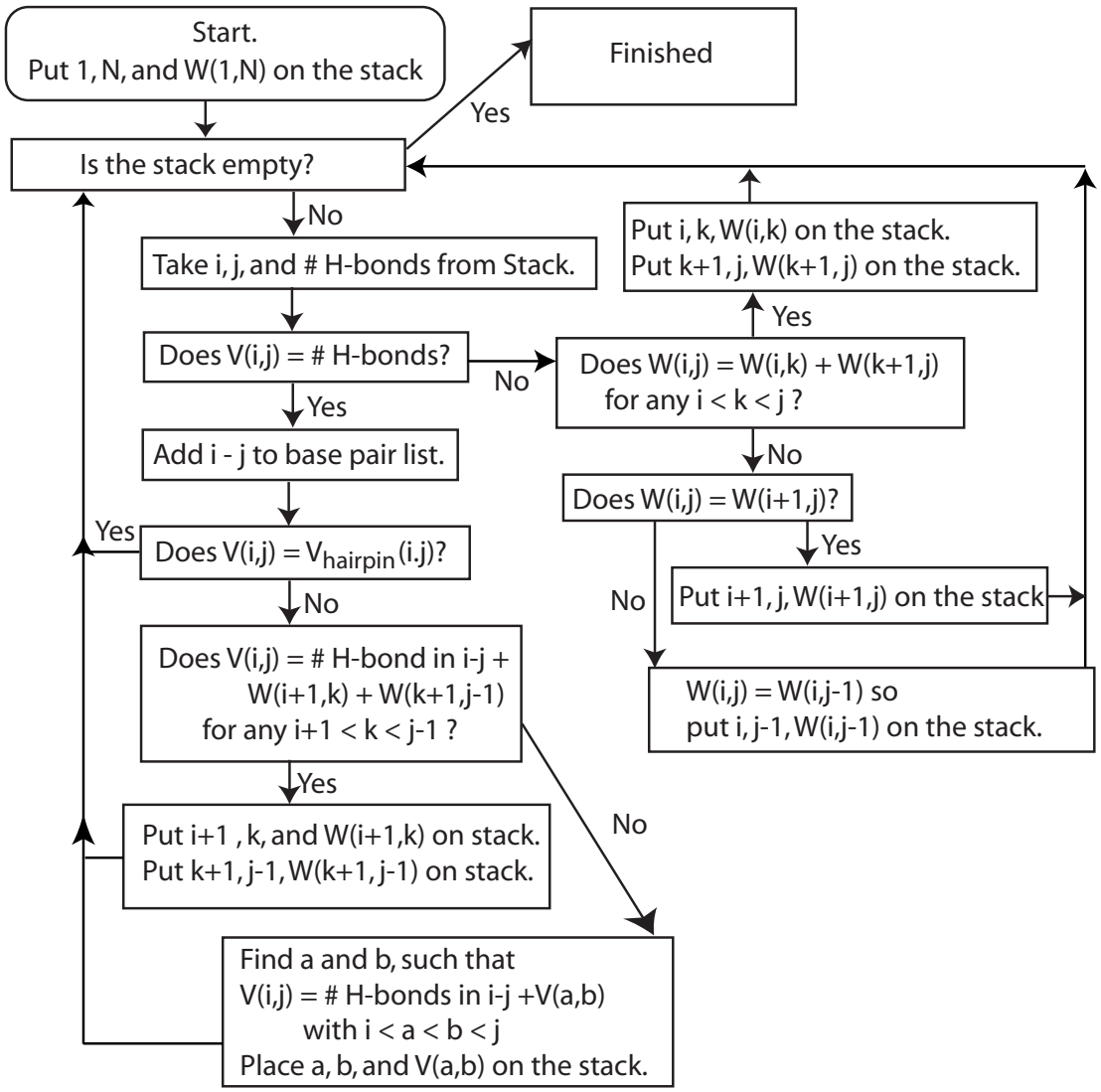
- $V(i,j) = 0$ *if i and j cannot pair canonically*
  $= \mathbf{max}[V_{hairpin}(i,j), V_{stack/internal/bulge}(i,j), V_{multibranch}(i,j)]$ *if i and j can pair*
- $V_{hairpin} = 0,$ *if* $j-i \leq 3$
  $=$ # hydrogen bonds in pair i and j, *if* $j-i > 3$
- $V_{stack/internal/bulge}$ = (# hydrogen bonds in pair i and j) + $\mathbf{max}[V(k1, k2)$ *for* $i < k1 < k2 < j]$
- $V_{multibranch}$ = (# hydrogen bonds in pair i and j) + $\mathbf{max}[W(i+1, k)+W(k+1,j-1)$ *for* $i+1 < k < j-1]$

- $W(i,j) = \mathbf{max}[V(i,j), W(i+1,j), W(i,j-1), W(i,k) +W(k+1,j)$ *for* $i < k < j]$

1. Filling step rules



2. Traceback step rules

5’ GCGGGUACCGAUCGUCGC3’

V	i	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
j		**G**	**C**	**G**	**G**	**G**	**U**	**A**	**C**	**C**	**G**	**A**	**U**	**C**	**G**	**U**	**C**	**G**	**C**
18	**C**																		
17	**G**																		
16	**C**																		
15	**U**																		
14	**G**																		
13	**C**																		
12	**U**																		
11	**A**																		
10	**G**																		
9	**C**																		
8	**C**																		
7	**A**																		
6	**U**																		
5	**G**																		
4	**G**																		
3	**G**																		
2	**C**																		
1	**G**																		

W	i	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
j		**G**	**C**	**G**	**G**	**G**	**U**	**A**	**C**	**C**	**G**	**A**	**U**	**C**	**G**	**U**	**C**	**G**	**C**
18	**C**																		
17	**G**																		
16	**C**																		
15	**U**																		
14	**G**																		
13	**C**																		
12	**U**																		
11	**A**																		
10	**G**																		
9	**C**																		
8	**C**																		
7	**A**																		
6	**U**																		
5	**G**																		
4	**G**																		
3	**G**																		
2	**C**																		
1	**G**																		