

Edit Distance --- DP algorithm matrix

	b	a	r	b	e	r	s
b	0	1	2	3	4	5	6
o		1					
a		2					
r			3				
d				4			
e					5		
r						6	
							7

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	b	a	r	b	e	r	s
b	0	1	2	3	4	5	6
o	1						
a	2						
r	3						
d	4						
e	5						
r	6						
	7						

Diagram illustrating the computation of the edit distance between "bar" and "bar". The matrix shows the minimum cost to transform the first *i*-th character of "bar" into the first *j*-th character of "bar". The value at cell (1,1) is 1, calculated as $\min(1+1, 0+\text{diff}(b,b), 1+1) = 0$.

The arrows indicate the transition from cell (0,0) to (1,1). One arrow points from (0,0) to (1,1) labeled "1". Another arrow points from (0,1) to (1,1) labeled "0=min(1+1, 0+diff(b,b), 1+1)". A bracket below the formula indicates the value "0" is selected.

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	b	a	r	b	e	r	s
b	0	1	2	3	4	5	6
o	1	0					
a							
r							
d							
e							
r							

A diagram illustrating the edit distance DP algorithm matrix. The rows and columns represent characters from the strings "bob" and "sorerer" respectively. The matrix entries are numerical values representing the minimum edit distance between substrings. A handwritten arrow points from the value '1' at row 'b' and column 'b' to the value '0' at row 'o' and column '0'. This indicates a transition from character 'b' to character 'o'.

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	b	a	r	b	e	r	s	
b	0	1	2	3	4	5	6	7
o	1	0	1	2	3	4	5	6
a	2							
r	3							
d	4							
e	5							
r	6							
	7							

Diagram illustrating the computation of edit distance between "bar" and "bear". The matrix shows the minimum cost to transform the first *i*-th character of "bar" into the first *j*-th character of "bear". The cost is calculated as the minimum of three operations: insertion, deletion, and substitution.

The highlighted cell at position (1, 1) (row "b", column "b") has a value of 1. The formula for this cell is:

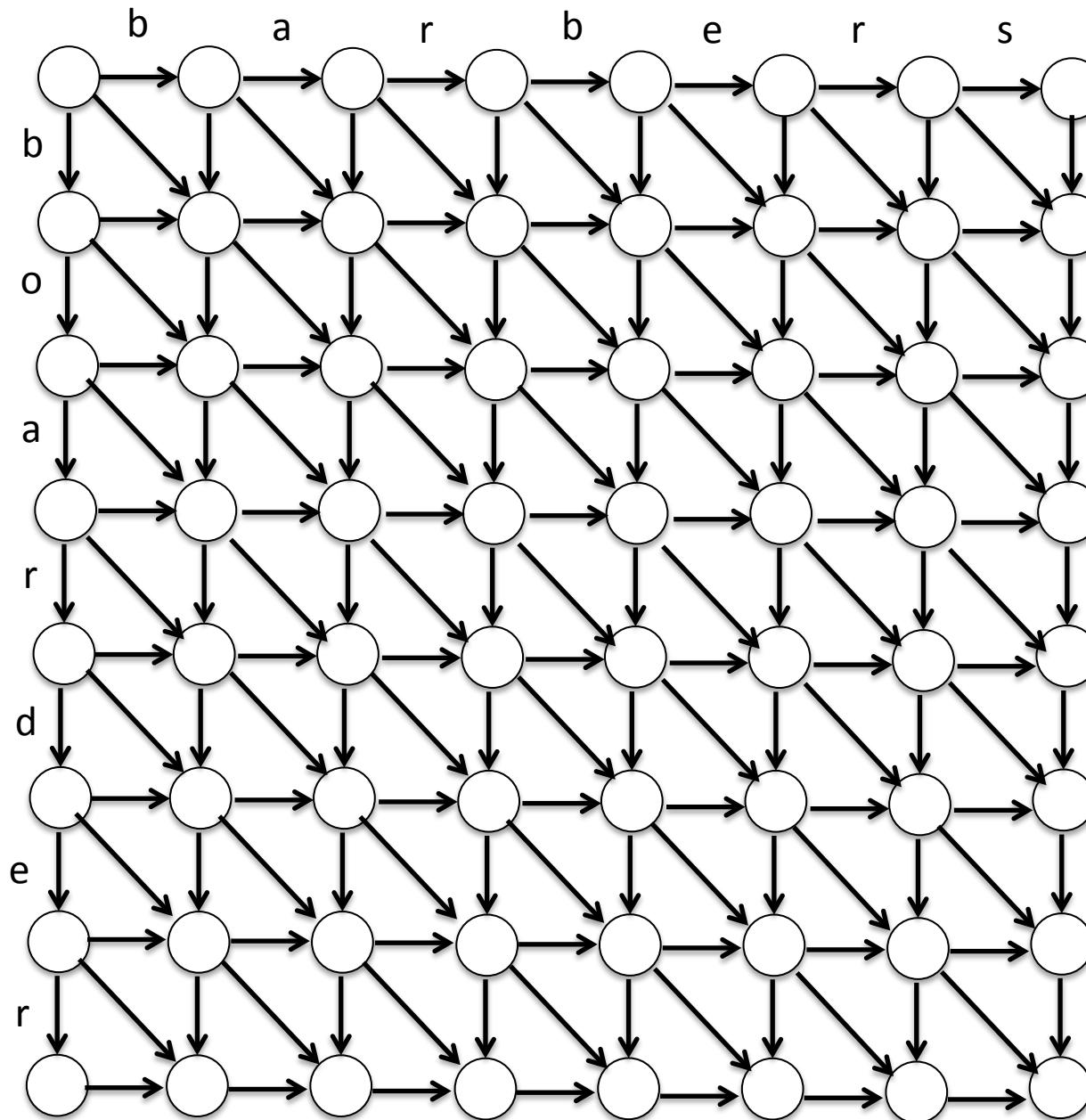
$$1 = \min(0+1, 1+\text{diff}(b,a), 2+1)$$

A bracket below the formula indicates that the term $=1$ corresponds to the substitution operation (diff(b,a)).

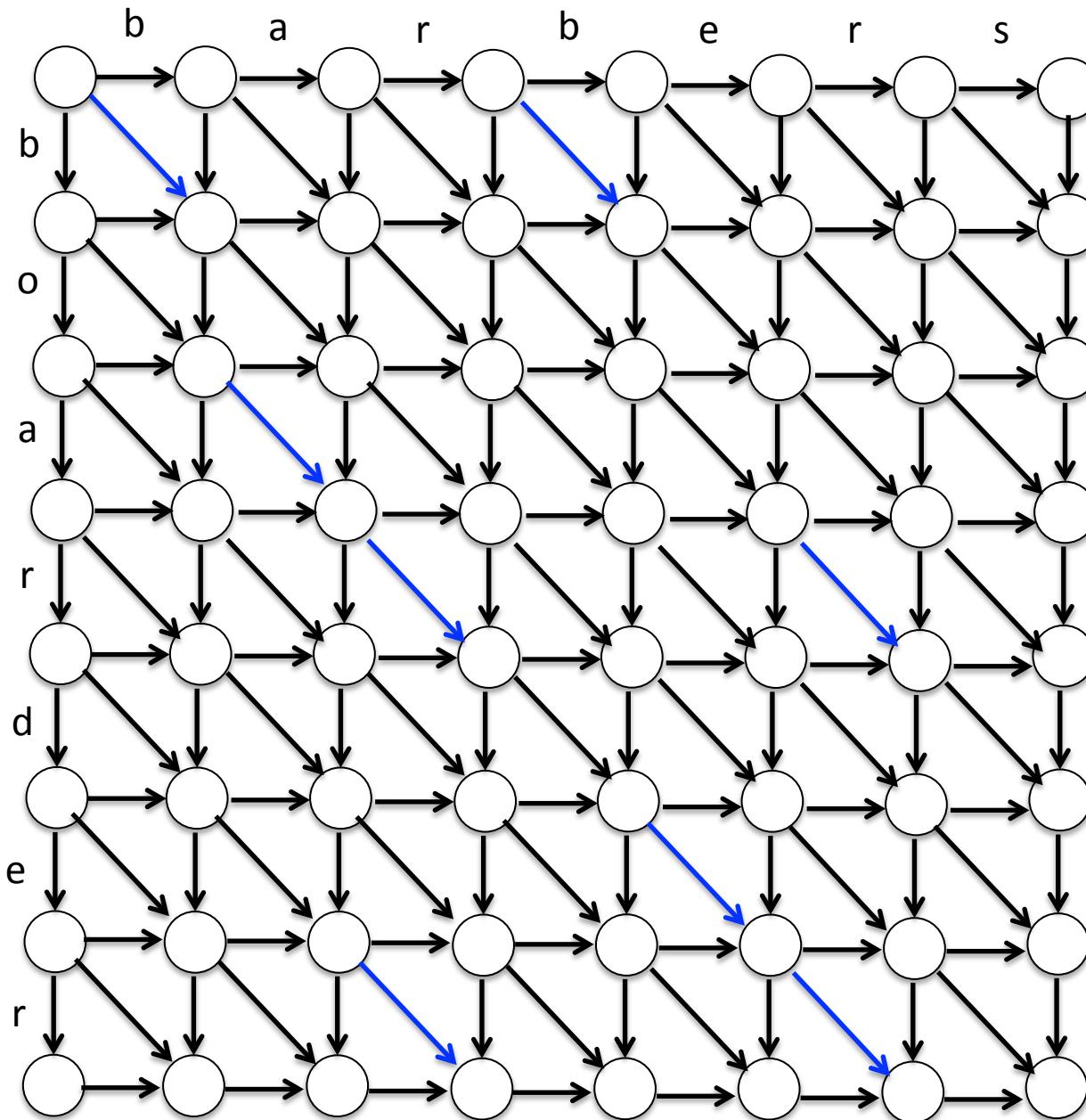
Edit Distance --- DP algorithm matrix

	b	a	r	b	e	r	s	
b	0 1	1 0	2 1	3 2	4 3	5 4	6 5	7 6
o	2 1	1 1	2 1	2 2	3 3	4 4	5 5	6 6
a	3 2	2 1	1 1	2 2	3 3	4 4	5 5	6 6
r	4 3	3 2	2 1	1 1	2 2	3 3	4 4	5 5
d	5 4	4 3	3 2	2 2	2 2	3 3	4 4	5 5
e	6 5	5 4	4 3	3 3	3 3	2 2	3 3	4 4
r	7 6	6 5	5 4	4 3	4 3	3 2	2 3	3 3

Edit Distance --- Digraph of subproblems

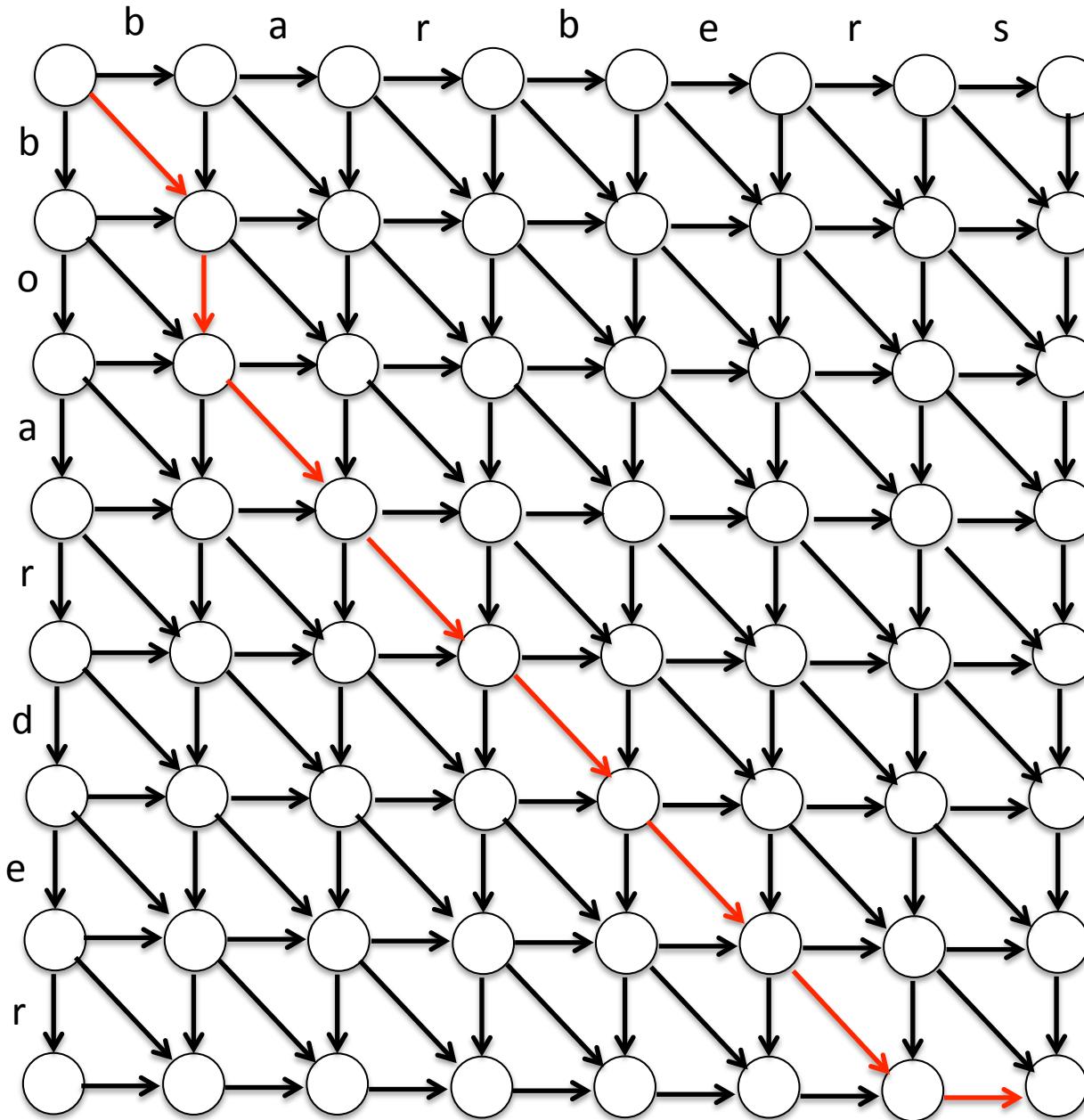


Edit Distance --- Digraph of subproblems



Blue: cost 0
Black: cost 1

Edit Distance --- Digraph of subproblems



red path
corresponds to
optimal
alignment