Step	Algorithm:
1a	
4	where
2	
3	while do
2,3	$\wedge$
5a	where
6	
8	
5b	
7	
2	
	endwhile
2,3	$\wedge \neg ($ $)$
1b	

Step	Algorithm: $[C] := \text{SYMM\_LU\_UNB\_VAR2}(A, B, C)$
1a	$C = \widehat{C}$
4	$B \to \left(B_L \middle| B_R \right), C \to \left(C_L \middle| C_R \right)$ where B_R has 0 columns, C_R has 0 columns
2	$\left(C_L \middle| C_R \right) = \left(\widehat{C}_L \middle| \widehat{C}_R \right)$
3	while $n(B_R) < n(B)$ do
2,3	$\left(C_L \middle| C_R \right) = \left(\widehat{C}_L \middle| \widehat{C}_R \right) \wedge n(B_R) < n(B)$
5a	$\left(B_L \middle| B_R \right) \to \left(B_0 \middle| b_1 \middle| B_2 \right), \left(C_L \middle| C_R \right) \to \left(C_0 \middle| c_1 \middle| C_2 \right)$ where b_1 has 1 column, c_1 has 1 column
6	$\left(C_0 \middle| c_1 \middle| C_2 \right) = \left(\widehat{C}_0 \middle| \widehat{c}_1 \middle| AB_0 + \widehat{C}_2 \right)$
8	$c_1 := Ab_1 + c_1$
5b	$\left(B_L \middle| B_R \right) \leftarrow \left(B_0 \middle| b_1 \middle| B_2 \right), \left(C_L \middle| C_R \right) \leftarrow \left(C_0 \middle| c_1 \middle| C_2 \right)$
7	$\left(C_0 \middle| c_1 \middle| C_2 \right) = \left(\widehat{C}_0 \middle| Ab_1 + \widehat{c}_1 \middle| AB_0 + \widehat{C}_2 \right)$
2	$\left(C_L \middle| C_R \right) = \left(\widehat{C}_L \middle| \widehat{C}_R \right)$
	endwhile
2,3	$\left(C_L \middle| C_R \right) = \left(\widehat{C}_L \middle| \widehat{C}_R \right) \wedge \neg(n(B_R) < n(B))$
1b	$[C] = \text{symm\_lu}(A, B, \widehat{C})$

Algorithm: $[C] := \text{SYMM\_LU\_UNB\_VAR2}(A, B, C)$
$B \to \left(B_L \middle| B_R \right), C \to \left(C_L \middle| C_R \right)$ where B_R has 0 columns, C_R has 0 columns   while $n(B_R) < n(B)$ do $\left(B_L \middle| B_R \right) \to \left(B_0 \middle| b_1 \middle| B_2 \right), \left(C_L \middle| C_R \right) \to \left(C_0 \middle| c_1 \middle| C_2 \right)$ where b_1 has 1 column, c_1 has 1 column
$c_1 := Ab_1 + c_1$
$\left(B_L \middle| B_R \right) \leftarrow \left(B_0 \middle| b_1 \middle| B_2 \right), \left(C_L \middle| C_R \right) \leftarrow \left(C_0 \middle| c_1 \middle| C_2 \right)$ endwhile

Step	Algorithm: $[C] := \text{SYMM\_LU\_UNB\_VAR}2(A, B, C)$
1a	$C = \widehat{C}$
4	where
2	
3	while do
2,3	$\wedge$
5a	where
6	
8	
5b	
7	
2	
	endwhile
2,3	$\wedge \neg ($ $)$
1b	$[C] = \text{symm\_lu}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \text{SYMM\_LU\_UNB\_VAR2}(A, B, C)$
1a	$C = \widehat{C}$
4	where
2	$\left(C_L \middle\| C_R \right) = \left(\widehat{C}_L \middle\| \widehat{C}_R \right)$
3	while do
2,3	$\left(C_L \middle\| C_R \right) = \left(\widehat{C}_L \middle\| \widehat{C}_R \right) \wedge$
5a	where
6	
8	
5b	
7	
2	$\left(C_L \middle\| C_R \right) = \left(\widehat{C}_L \middle\| \widehat{C}_R \right)$
	endwhile
2	$\left(C_L \middle\| C_R \right) = \left(\widehat{C}_L \middle\| \widehat{C}_R \right) \wedge \neg(\qquad\qquad)$
1b	$[C] = \text{symm\_lu}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \text{SYMM\_LU\_UNB\_VAR2}(A, B, C)$
1a	$C = \widehat{C}$
4	where
2	$\left(C_L \middle| C_R \right) = \left(\widehat{C}_L \middle| \widehat{C}_R \right)$
3	while $n(B_R) < n(B)$ do
2,3	$\left(C_L \middle| C_R \right) = \left(\widehat{C}_L \middle| \widehat{C}_R \right) \wedge n(B_R) < n(B)$
5a	where
6	
8	
5b	
7	
2	$\left(C_L \middle| C_R \right) = \left(\widehat{C}_L \middle| \widehat{C}_R \right)$
	endwhile
2,3	$\left(C_L \middle| C_R \right) = \left(\widehat{C}_L \middle| \widehat{C}_R \right) \wedge \neg(n(B_R) < n(B))$
1b	$[C] = \text{symm\_lu}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \text{SYMM\_LU\_UNB\_VAR2}(A, B, C)$
1a	$C = \widehat{C}$
4	$B \to \left(B_L \middle\| B_R \right), C \to \left(C_L \middle\| C_R \right)$ where B_R has 0 columns, C_R has 0 columns
2	$\left(C_L \middle\| C_R \right) = \left(\widehat{C}_L \middle\| \widehat{C}_R \right)$
3	while $n(B_R) < n(B)$ do
2,3	$\left(C_L \middle\| C_R \right) = \left(\widehat{C}_L \middle\| \widehat{C}_R \right) \wedge n(B_R) < n(B)$
5a	where
6	
8	
5b	
7	
2	$\left(C_L \middle\| C_R \right) = \left(\widehat{C}_L \middle\| \widehat{C}_R \right)$
	endwhile
2,3	$\left(C_L \middle\| C_R \right) = \left(\widehat{C}_L \middle\| \widehat{C}_R \right) \wedge \neg(n(B_R) < n(B))$
1b	$[C] = \text{symm\_lu}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \text{SYMM\_LU\_UNB\_VAR2}(A, B, C)$
1a	$C = \widehat{C}$
4	$B \to \left(B_L \middle| B_R \right), C \to \left(C_L \middle| C_R \right)$ where B_R has 0 columns, C_R has 0 columns
2	$\left(C_L \middle| C_R \right) = \left(\widehat{C}_L \middle| \widehat{C}_R \right)$
3	while $n(B_R) < n(B)$ do
2,3	$\left(C_L \middle| C_R \right) = \left(\widehat{C}_L \middle| \widehat{C}_R \right) \wedge n(B_R) < n(B)$
5a	$\left(B_L \middle| B_R \right) \to \left(B_0 \middle| b_1 \middle| B_2 \right), \left(C_L \middle| C_R \right) \to \left(C_0 \middle| c_1 \middle| C_2 \right)$ where b_1 has 1 column, c_1 has 1 column
6	
8	
5b	$\left(B_L \middle| B_R \right) \leftarrow \left(B_0 \middle| b_1 \middle| B_2 \right), \left(C_L \middle| C_R \right) \leftarrow \left(C_0 \middle| c_1 \middle| C_2 \right)$
7	
2	$\left(C_L \middle| C_R \right) = \left(\widehat{C}_L \middle| \widehat{C}_R \right)$
	endwhile
2,3	$\left(C_L \middle| C_R \right) = \left(\widehat{C}_L \middle| \widehat{C}_R \right) \wedge \neg(n(B_R) < n(B))$
1b	$[C] = \text{symm\_lu}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \text{SYMM\_LU\_UNB\_VAR2}(A, B, C)$
1a	$C = \widehat{C}$
4	$B \to \left(B_L \middle| B_R \right), C \to \left(C_L \middle| C_R \right)$ where B_R has 0 columns, C_R has 0 columns
2	$\left(C_L \middle| C_R \right) = \left(\widehat{C}_L \middle| \widehat{C}_R \right)$
3	while $n(B_R) < n(B)$ do
2,3	$\left(C_L \middle| C_R \right) = \left(\widehat{C}_L \middle| \widehat{C}_R \right) \wedge n(B_R) < n(B)$
5a	$\left(B_L \middle| B_R \right) \to \left(B_0 \middle| b_1 \middle| B_2 \right), \left(C_L \middle| C_R \right) \to \left(C_0 \middle| c_1 \middle| C_2 \right)$ where b_1 has 1 column, c_1 has 1 column
6	$\left(C_0 \middle| c_1 \middle| C_2 \right) = \left(\widehat{C}_0 \middle| \widehat{c}_1 \middle| AB_0 + \widehat{C}_2 \right)$
8	
5b	$\left(B_L \middle| B_R \right) \leftarrow \left(B_0 \middle| b_1 \middle| B_2 \right), \left(C_L \middle| C_R \right) \leftarrow \left(C_0 \middle| c_1 \middle| C_2 \right)$
7	
2	$\left(C_L \middle| C_R \right) = \left(\widehat{C}_L \middle| \widehat{C}_R \right)$
	endwhile
2,3	$\left(C_L \middle| C_R \right) = \left(\widehat{C}_L \middle| \widehat{C}_R \right) \wedge \neg(n(B_R) < n(B))$
1b	$[C] = \text{symm\_lu}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \textsc{symm\_lu\_unb\_var2}(A, B, C)$
1a	$C = \widehat{C}$
4	$B \to \left(B_L \middle| B_R \right), C \to \left(C_L \middle| C_R \right)$ where B_R has 0 columns, C_R has 0 columns
2	$\left(C_L \middle| C_R \right) = \left(\widehat{C}_L \middle| \widehat{C}_R \right)$
3	while $n(B_R) < n(B)$ do
2,3	$\left(C_L \middle| C_R \right) = \left(\widehat{C}_L \middle| \widehat{C}_R \right) \wedge n(B_R) < n(B)$
5a	$\left(B_L \middle| B_R \right) \to \left(B_0 \middle| b_1 \middle| B_2 \right), \left(C_L \middle| C_R \right) \to \left(C_0 \middle| c_1 \middle| C_2 \right)$ where b_1 has 1 column, c_1 has 1 column
6	$\left(C_0 \middle| c_1 \middle| C_2 \right) = \left(\widehat{C}_0 \middle| \widehat{c}_1 \middle| AB_0 + \widehat{C}_2 \right)$
8	
5b	$\left(B_L \middle| B_R \right) \leftarrow \left(B_0 \middle| b_1 \middle| B_2 \right), \left(C_L \middle| C_R \right) \leftarrow \left(C_0 \middle| c_1 \middle| C_2 \right)$
7	$\left(C_0 \middle| c_1 \middle| C_2 \right) = \left(\widehat{C}_0 \middle| Ab_1 + \widehat{c}_1 \middle| AB_0 + \widehat{C}_2 \right)$
2	$\left(C_L \middle| C_R \right) = \left(\widehat{C}_L \middle| \widehat{C}_R \right)$
	endwhile
2	$\left(C_L \middle| C_R \right) = \left(\widehat{C}_L \middle| \widehat{C}_R \right) \wedge \neg(n(B_R) < n(B))$
1b	$[C] = \text{symm\_lu}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \textsc{symm\_lu\_unb\_var2}(A, B, C)$
1a	$C = \widehat{C}$
4	$B \to \left(B_L \middle| B_R \right), C \to \left(C_L \middle| C_R \right)$ where B_R has 0 columns, C_R has 0 columns
2	$\left(C_L \middle| C_R \right) = \left(\widehat{C}_L \middle| \widehat{C}_R \right)$
3	while $n(B_R) < n(B)$ do
2,3	$\left(C_L \middle| C_R \right) = \left(\widehat{C}_L \middle| \widehat{C}_R \right) \wedge n(B_R) < n(B)$
5a	$\left(B_L \middle| B_R \right) \to \left(B_0 \middle| b_1 \middle| B_2 \right), \left(C_L \middle| C_R \right) \to \left(C_0 \middle| c_1 \middle| C_2 \right)$ where b_1 has 1 column, c_1 has 1 column
6	$\left(C_0 \middle| c_1 \middle| C_2 \right) = \left(\widehat{C}_0 \middle| \widehat{c}_1 \middle| AB_0 + \widehat{C}_2 \right)$
8	$c_1 := Ab_1 + c_1$
5b	$\left(B_L \middle| B_R \right) \leftarrow \left(B_0 \middle| b_1 \middle| B_2 \right), \left(C_L \middle| C_R \right) \leftarrow \left(C_0 \middle| c_1 \middle| C_2 \right)$
7	$\left(C_0 \middle| c_1 \middle| C_2 \right) = \left(\widehat{C}_0 \middle| Ab_1 + \widehat{c}_1 \middle| AB_0 + \widehat{C}_2 \right)$
2	$\left(C_L \middle| C_R \right) = \left(\widehat{C}_L \middle| \widehat{C}_R \right)$
	endwhile
2,3	$\left(C_L \middle| C_R \right) = \left(\widehat{C}_L \middle| \widehat{C}_R \right) \wedge \neg(n(B_R) < n(B))$
1b	$[C] = \text{symm\_lu}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \text{SYMM\_LU\_UNB\_VAR2}(A, B, C)$
	$B \to \left(B_L \middle| B_R \right), C \to \left(C_L \middle| C_R \right)$ where B_R has 0 columns, C_R has 0 columns
	while $n(B_R) < n(B)$ do
	$\left(B_L \middle| B_R \right) \to \left(B_0 \middle| b_1 \middle| B_2 \right), \left(C_L \middle| C_R \right) \to \left(C_0 \middle| c_1 \middle| C_2 \right)$ where b_1 has 1 column, c_1 has 1 column
	$c_1 := A b_1 + c_1$
	$\left(B_L \middle| B_R \right) \leftarrow \left(B_0 \middle| b_1 \middle| B_2 \right), \left(C_L \middle| C_R \right) \leftarrow \left(C_0 \middle| c_1 \middle| C_2 \right)$
	endwhile

Algorithm: $[C] := \text{SYMM\_LU\_UNB\_VAR2}(A, B, C)$

$B \to \left(B_L \middle| B_R \right), C \to \left(C_L \middle| C_R \right)$
   where B_R has 0 columns, C_R has 0 columns

while $n(B_R) < n(B)$ do
   $\left(B_L \middle| B_R \right) \to \left(B_0 \middle| b_1 \middle| B_2 \right), \left(C_L \middle| C_R \right) \to \left(C_0 \middle| c_1 \middle| C_2 \right)$
     where b_1 has 1 column, c_1 has 1 column

   $c_1 := A b_1 + c_1$

   $\left(B_L \middle| B_R \right) \leftarrow \left(B_0 \middle| b_1 \middle| B_2 \right), \left(C_L \middle| C_R \right) \leftarrow \left(C_0 \middle| c_1 \middle| C_2 \right)$

endwhile