
Algorithm A.6 Local search with tabu list

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Procedure LegalOp (
     $o$ , // Search operator to check
     $TABU$  // List of recently applied operators
)
1  if exists  $o' \in TABU$  such that  $o$  reverses  $o'$  then return false
2  else return true
3

Procedure Tabu-Structure-Search (
     $\sigma_0$ , // initial candidate solution
    score, // Score
     $\mathcal{O}$ , // A set of search operators
     $L$ , // Size of tabu list
     $N$ , // Stopping criterion
)
1   $\sigma_{best} \leftarrow \sigma_0$ 
2   $\sigma \leftarrow \sigma_{best}$ 
3   $t \leftarrow 1$ 
4   $LastImprovement \leftarrow 0$ 
5  while  $LastImprovement < N$ 
6       $o^{(t)} \leftarrow \epsilon$  // Set current operator to be uninitialized
7      for each operator  $o \in \mathcal{O}$  // Search for best allowed operator
8          if LegalOp( $o$ ,  $\{o^{(t-L)}, \dots, o^{(t-1)}\}$ ) then
9               $\sigma_o \leftarrow o(\sigma)$ 
10             if  $\sigma_o$  is legal solution then
11                 if  $o^{(t)} = \epsilon$  or  $score(\sigma_o) > score(\sigma_{o^t})$  then
12                      $o^{(t)} \leftarrow o$ 
13              $\sigma \leftarrow \sigma_{o^t}$ 
14             if  $score(\sigma) > score(\sigma_{best})$  then
15                  $\sigma_{best} \leftarrow \sigma_o$ 
16                  $LastImprovement \leftarrow 0$ 
17             else
18                  $LastImprovement \leftarrow LastImprovement + 1$ 
19                  $t \leftarrow t + 1$ 
20
21 return  $\sigma_{best}$ 

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