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1: procedure BACKWARD INDUCTION ALGORITHM
2:    $t \leftarrow T$ 
3:   for  $s_T \in \mathcal{S}$  do
4:      $v_*^T(s_T) \leftarrow r_T(s_T)$ 
5:   end for
6:   while  $t \geq 1$  do
7:     for  $s_t \in \mathcal{S}$  do
8:       Compute and memorize  $A_t^*(s_t)$ 
9:        $a^* \leftarrow$  first element in  $A_t^*(s_t)$ 
10:       $v_*^t(s_t) \leftarrow \mathbb{E}[R_{t+1} \mid A_t = a^*, S_t = s_t] + \sum_{s \in \mathcal{S}} v_*^{t+1}(s) \mathbb{P}(S_{t+1} = s \mid A_t = a^*, S_t = s_t)$ 
11:    end for
12:     $t \leftarrow t - 1$ 
13:  end while
14: end procedure

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