

Heuristik für „Densely-connected Biclustering“

Algorithm 1 Densely-connected Biclustering

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1: function TESTHOMOGENITY( $A, \omega, \delta, g$ )
2:    $l \leftarrow (A^T)_{g_0}, l \leftarrow u$ 
3:   for all nodes  $i$  from  $g \setminus \{g_0\}$  do
4:     for all dimensions  $d$  of attribute matrix  $A$  do
5:        $l \leftarrow \min\{l_d, A_{id}\}, u \leftarrow \max\{l_d, A_{id}\}$ 
6:    $c \leftarrow 0$ 
7:   for all dimensions  $d$  of attribute matrix  $A$  do
8:     if  $|u_d - l_d| \leq \omega_d$  then
9:        $c \leftarrow c + 1$ 
10:    if  $c \geq \delta$  then
11:      return true
12:  return false

1: function PREPROCESSGRAPH( $M, A, \omega, \delta$ )
2:    $G \leftarrow \emptyset$ 
3:   for all rows  $i$  of adjascency matrix  $M$  do
4:     for all columns  $j$  of adjascency matrix  $M$  do
5:       if  $M_{ij} = 1$  then
6:         if TESTHOMOGENITY( $A, \omega, \delta, \{i, j\}$ ) then
7:            $G \leftarrow G \cup \{\{i, j\}\}$ 
8:         else
9:            $M_{ij} = 0, M_{ji} = 0$ 
10:  return  $G$ 

1: function DCB( $M, A, \alpha, \omega, \delta$ )
2:    $G \leftarrow$  PREPROCESSGRAPH( $M, A, \omega, \delta$ )
3:    $F \leftarrow \emptyset$ 
4:   while  $G \neq \emptyset$  do
5:      $G' \leftarrow G, G \leftarrow \emptyset$ 
6:     for all node sets  $g$  in  $G'$  do
7:        $b \leftarrow$  true
8:       for all connected nodes  $h$  with  $h > \max g$  do
9:          $\hat{g} \leftarrow g \cup \{h\}$ 
10:        if TESTHOMOGENITY( $A, \omega, \delta, \hat{g}$ )  $\wedge$  GRAPHDENSITY( $M, \hat{g}$ )  $\leq \alpha$  then
11:           $G \leftarrow G \cup \{\hat{g}\}$ 
12:           $b \leftarrow$  false
13:        if  $b$  then
14:           $F \leftarrow F \cup \{g\}$ 
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