Algoritmo 1: *GBILI*

Input: Labeled dataset L, unlabeled dataset U, number of nearest neighbors K

Output: Graph G

1 Generate distance matrix D between all data points
2 $G \leftarrow dict$
3 for *i=1; i < |V|; i++*
4   **for** *k=1; k < K; k++*
5   **for** *j=1; j < |V|; j++*
6   **if** $D(v_i, v_j)$ *is the kNN*
7 $listkNN(v_i) \leftarrow v_j$
8   **end**
9   **endfor**
10   **endfor**
11   **for** *j=1; j < listkNN(v_i); j++*
12   **for** *k=1; k < K; k++*
13   **if** $D(v_j, v_i)$ *is the kNN*
14 $listMutualkNN(v_i) \leftarrow v_j$
15   **end**
16   **endfor**
17   **endfor**
18   **for** *j=1; j < listMutualkNN(v_i); j++*
19   **for** *l=1; l < L; l++*
20   **if** $D(v_i, v_j) + D(v_j, v_i)$ *is minimal*
21 $G \leftarrow e_{i,j}$
22   **end**
23   **endfor**
24   **endfor**
25 **endfor**
26 $Components = BFS(G)$
27 for *i=1; i < |V|; i++*
28   **if** $Components(v_i) \notin L$
29   **for** *k=1;k < listkNN(v_i); k++*
30   **if** $Components(v_k) \in L$
31 $G \leftarrow e_{i,k}$
32   **end**
33   **endfor**
34   **end**
35 **endfor**
36 return G