D-STAR
1 for \((s_i, s_j) \in I\)
2   for \((s_k, s_l) \in I_d - (s_i, s_j)\)
3     Perform a pairwise sequence comparison to find all positions in
4        \(s_i\) which has a neighbor of distance 2 in \(s_k\). Let the positions
5        be \(P_1 = \{u_1, u_2, \ldots, u_g\}\).
6     Do the same for \(s_j\) and \(s_l\) and get the list of positions in \(s_j\) which
7        is \(P_2 = \{v_1, v_2, \ldots, v_h\}\).
8     if \(P_1 \neq \emptyset\)
9        for all \(u \in P_1\) add \(s_k\) into \(S'_{2d}(s_i[u])\)
10       if \(P_2 \neq \emptyset\)
11          for all \(v \in P_2\) add \(s_l\) into \(S'_{2d}(s_j[v])\)
12     for \((u, v) \in P_1 \times P_2\),
13       Add \((s_k, s_l)\) into \(I(s_i[u], s_j[v])\).
14 for \((u, v)\) whose \(|S'_{2d}(s_i[u])|, |S'_{2d}(s_j[v])| \geq k_n\) and \(|I(s_i[u], s_j[v])| \geq k_i\),
15   Compute \(S_{2d}(s_i[u]), S_{2d}(s_j[v]),\) and \(\chi(S_{2d}(s_i[u]), S_{2d}(s_j[v]))\)
16 Put the \((l, d)\)-star \((S'_{2d}(s_i[u]), S'_{2d}(s_j[v]))\) into the sorted list \(L\).