

Hidden Orgs Finder

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1 Our approach

1.1 Encoding

- A vertex x_i is encoded as i and $-x_i$ as $i+n$ where n is number of nodes in graph.
- A $DP_{i,j}$ is represented as $i*k+j+2*n$ where n is the number of nodes in the graph and k is the size of the subgraph.

1.2 Clauses generation

- We generated the clause of $-x_i \vee -x_j$ when x_i and x_j are not connected.
- We created a DP table for vertex selection. Where $DP_{i,k}$ represents choosing k vertexes out of the i vertexes.
- Recursion: $DP_{i,k} = DP_{i-1,k} \mid (DP_{i-1,k-1} \ \& \ x_i)$, the recursion is quite obvious.

1.3 Degree heuristic

- We generated clauses for the vertex with degrees less than k . When we were searching for a k -size clique.
- Clause : $-x_i$.

1.4 Binary Search

- For finding the maximal subgraph we can binary search from 0 to n on the size of the subgraph.

1.5 Code

- You can check the code on Github