Computer Science Master Thesis Presentation

An improved upper bound and algorithm for clique covers

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Abstract:

Indeterminate strings have received considerable attention in the recent past. This attention is due to their applicability in bioinformatics, and to the natural correspondence with undirected graphs. One aspect of this correspondence is the fact that the minimum alphabet size of indeterminates representing any given undirected graph equals the size of the minimal clique cover of this graph. This paper first considers a related problem: characterize $\Theta_n(m)$, which is the size of the largest possible minimal clique cover (i.e., an exact upper bound), and hence alphabet size of the corresponding indeterminate, of any graph on n vertices and m edges. We provide improvements to the known upper bound for $\Theta_n(m)$. Recent results also provide an algorithm which finds clique covers in polynomial time. We build on this result with a heuristic for vertex sorting which significantly improves their algorithm's results, particularly in dense graphs.

2:00 pm, Thursday, May 3rd, 2018
Sierra Hall 1111

All students and faculty are invited

An Academic Affairs Event