

Performance Analysis of Maximum Independent Set Algorithms on Circle Graphs

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Graph theory is a branch of mathematics with a great number of real world applications due to its strong ability to abstract many real world problems into a set of nodes and adjacent edges. One type of a graph is called a circle graph, which represents a circle's chords and the intersection between them. Finding the largest number of non intersecting nodes in this graph, called the maximum independent set is a problem that many algorithms have been developed to tackle, as it has applications in computational geometry, circuit development and compiler optimisation. However many of these algorithms lack experimental data to support their theoretical performance analysis. In this paper I perform experimental analysis on many of the latest algorithms for finding the maximum independent set of a circle graph, including an unpublished algorithm, and discuss the results.