Abstract

An important branch of modern Artificial Intelligence is the problem solving. This area of AI includes Binary Constraint Satisfaction Problems –CSPs. The solution of these problems, is achieved through search and Constraint Propagation. MAC (Maintaining Arc Constistency) algorithm, is considered as the most popular algorithm, to resolve such kind of problems. Using heuristics, the specific algorithmsolver, improves significantly its performance.

The purpose of this paper, is the comparison of the best general Variable Ordering Heuristics VOHs in terms of MAC algorithm's execution time and in terms of the number of nodes it creates.

Specifically, the four basic heuristics which we examine are dom/ddeg (Domain over Dynamic Degree), dom/wdeg (Domain over Weighted Degree), ABS (Activity Based Search) and IBS (Impact Based Search), from which dom/wdeg is considered as the best choice through the experimental process. Finally, Common Choice heuristic has been studied, which is the combined function of the above four heuristics and it presents dynamic behavior.