An approach to solve the Set Covering Problem with the Soccer League Competition algorithm

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The Soccer League Competition algorithm (SLC) is a new nature-based metaheuristic approach to solve optimization problems. It gets its basis model from the interaction between soccer teams and their players in a soccer league competition, where each player (feasible solution) compete for victory and be the best player. This paper presents a review of the underlaying SLC model and a practical approach to solve the Set Covering Problem using SLC and Python as programming language and tested over a widely OR-Library SCP benchmarks to obtain convergence capability and effectiveness of the implementation.

Combinatorial

Constraint satisfaction

Optimization

Set Covering Problem

Soccer League Competition

Algorithms

Constraint satisfaction problems

Optimization

Problem oriented languages

Sports

Combinatorial

Constraint Satisfaction

Feasible solution

League competition

Meta-heuristic approach

Optimization problems

Set covering problem

Soccer team

Problem solving