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Abstract

Nowadays, puzzles are used commonly as a fountain head of our monotonous lives or to spend free time. Crossmatching puzzle (CMP) is quite similar to the crossword puzzle (CWP). There are detection key table and control key table in crossmatching puzzles instead of questions in crosswrod puzzle which are written from left to right and from top to bottom. Letters in each row of the main solution table are arranged in an order in detection key table. In the same way, letters in the main solution table are arranged in order column by column are put in the control key table. Therefore, the main table is tried to solve with crossing of the letters in the detection key table and control key table.

For solution of cross-matching puzzle can be used depth search algorithm. However, in spite of depth search algorithm gives the exact result, size of puzzle as augments computing time of solution increases exponentially and it makes the solution of puzzle impossible. In this case, stochastic search is better to use instead of deterministic search algorithm.

In this study, improved genetic algorithm as multi-layer is used as stochastic search method [2]. In this algorithm, each letters represent a gene and each rows represent a chromosome. An individual is generated by chromosomes as number of rows come together. Fitting function of created individual is determined according to fitness of control key table.

Keywords: *Crossmatching Puzzle, Multi-Layer Genetic Algorithm*

References

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