

Animar Rotsianglum 2010: A Shift-and-Check Operator for LZWGA.

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The objective of this research is to improve the performance of LZWGA. We propose new operators call “shift” and “shift-and-check”. The shift operator left-shifts numbers in LZWGA chromosome. A position to be shifted was randomly selected. The shift-and-check operator adds a conditional that shifted positions cannot be zero after shifting. In addition we propose an improved shift-and-check operator and called “ISC” for solving a large problem. The shifting probability of ISC depends on its position. The left position had a higher shift rate than the right position.

For the experiment, we compare the performance of LZWGA by using the chromosome fitness value in 4 test problems: OneMax, RandomMax, RoyalRoad, and RandomRoyalRoad. We use a small population size. The results show that the shift operator helped LZWGA to produce a better chromosome in every test problems. The shift-and-check operator helps LZWGA to find a solution quickly. The ISC improved the performance of LZWGA for solving large problems.

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