

Sawitree Chumlamai 2010: Hybrid LZWGA. Master of Science (Computer Science),
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Assistant Professor Worasait Suwannik, Ph.D. 63 pages.

LZWGA can solve OneMax and RoyalRoad problems very efficiently. However, the answers of these problem have high regularity. Therefore, we proposed two new randomly problems: RandomMax and RandomRoyalRoad. These problems are based on the traditional problems but the answers are generated randomly. LZWGA could not solve these randomly problems.

Therefore, we combine a local search algorithm to LZWGA to improved its performance. We named the algorithm “Hybrid LZWGA”. The experiment shows that local search algorithm makes significant improvement to the performance of LZWGA. Hybrid LZWGA performs 38% better in RandomMax problem. It performs 55% and 47% better in RandomRoyalRoad problem with 4-bit and 8-bit block size.

Student’s signature

Thesis Advisor’s signature