Review of: "BMR and BWR: Two Simple Metaphor-Free Optimization Algorithms for Solving Constrained and Unconstrained Problems"

Padmakar Pawar[1]

1 K. K. Wagh Institute of Engineering Education and Research

Potential competing interests: No potential competing interests to declare.

The article is very well written, demonstrating the effectiveness of the proposed metaphor-less optimization algorithms, namely Best-Mean-Random (BMR) and Best-Worst-Random (BWR). The performance of the algorithms is compared with that of other popular algorithms for solving constrained and unconstrained benchmark problems.

Equations 1-4 form the basis of these algorithms. It can be seen from Eq. 1 that the second term, r1,j,i (Vj,best,i - T*Vj.mean,i), ensures a significant improvement in the objective function in the initial generations, since the difference in the best and mean values of the population is relatively large, while the third term, r2,j,i (Vj,best,i - Vj,random,i), provides less improvement. However, during subsequent generations, the difference between the best and mean solutions will keep on reducing, while the difference between the best and random solutions will keep on increasing. Thus, unlike greedy algorithms, the proposed algorithms ensure uniform and consistent improvement during the entire search process. This prevents the algorithms from premature convergence and getting stuck into local optimum solutions. This qualifies the algorithms to solve more complex problems.