

A Comparative Study Of African Buffalo Optimization and Randomized Insertion Algorithm for Asymmetric

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ABSTRACT

In this study, a comparative study of the African Buffalo Optimization algorithm and the Randomized Insertion Algorithm to solving the asymmetric Travelling Salesman's Problem is made with the aim of ascertaining a better method to solving the asymmetric Travelling Salesman's Problem instances. The choice of the Random Insertion Algorithm as a comparative algorithm was informed by the fact that it has the best results in literature. The Randomized Insertion and African Buffalo Optimization algorithms employ two different methods in attempting solutions to ATSP: the African Buffalo Optimization employs the modified Karp-Steele approach while the Randomized Insertion uses random insertion approach. After attempting 15 benchmark ATSP cases out of the 19 datasets available in TSPLIB, it was discovered that the African Buffalo Optimization achieves slightly better result to the problems and at a much faster speed.

KEYWORDS: African Buffalo Optimization, Asymmetric Travelling Salesman's Problem, Randomized Insertion Algorithm, African buffalos

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