# Multi-verse optimizer algorithm: a comprehensive survey of its results, variants, and applications

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This review paper presents a comprehensive and full review of the so-called optimization algorithm, multi-verse optimizer algorithm (MOA), and reviews its main characteristics and procedures. This optimizer is a kind of the most recent powerful nature-inspired meta-heuristic algorithms, where it has been successfully implemented and utilized in several optimization problems in a variety of several fields, which are covered in this context, such as benchmark test functions, machine learning applications, engineering applications, network applications, parameters control, and other applications of MOA. This paper covers all the available publications that have been used MOA in its application, which are published in the literature including the variants of MOA such as binary, modifications, hybridizations, chaotic, and multi-objective. Followed by its applications, the assessment and evaluation, and finally the conclusions, which interested in the current works on the optimization algorithm, recommend potential future research directions.

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