

# Abstract

In this work we presented the performances of a new class of evolutionary algorithms called chaotic optimization algorithm (COA). Proposed to solve nonlinear optimization problems with bounded variables by Caponetto et al.

Chaotic optimization is a new stochastic optimization algorithm, which directly uses chaotic variables to find the optimal solution. Different chaotic maps have been considered, combined with several working strategies. We propose five different 2D chaotic maps in an optimization algorithm using a two-step chaotic optimization method and compare them.

This study reviews and compares chaotic optimization algorithms from the literature. Moreover, the two-phase strategy is a commonly used technique in a COA to refine the solution and help escape local optima. A performance study is conducted to understand their impact on a chaotic optimization algorithm.