Abstract

Introduction

Optimization problems require immense amount of computational time as the problem scales increase. It is often unrealistic to compute an optimization problem using classical computers because of the problem’s nondeterministic polynomial computational time. Metaheuristic algorithms are built to overcome this computational time problem. Although metaheuristic algorithms do not always output the global optimal solution, they provide efficiency in approximating optimal solutions. They make assumptions about the problem space in order to reduce search space and computation.

Background

Particle Swarm Optimization overview

Depth into Gravitational Search Algorithm

Comparison between PSO and GSA

Introduce CPSO

Difference between PSO and CPSO

Difference between GSA and CPSO

Lay out the mechanism behind CPSO (mathematic formulas and metaheuristic technique)