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# A New Tool for Global Optimization Problems: Cuttlefish Algorithm

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**Abstract :** This paper presents a new meta-heuristic bio-inspired optimization algorithm which is called Cuttlefish Algorithm (CFA). The algorithm mimics the mechanism of color changing behavior of the cuttlefish to solve numerical global optimization problems. The colors and patterns of the cuttlefish are produced by reflected light from three different layers of cells. The proposed algorithm considers mainly two processes: reflection and visibility. Reflection process simulates light reflection mechanism used by these layers, while visibility process simulates visibility of matching patterns of the cuttlefish. To show the effectiveness of the algorithm, it is tested with some other popular bio-inspired optimization algorithms such as Genetic Algorithms (GA), Particle Swarm Optimization (PSO) and Bees Algorithm (BA) that have been previously proposed in the literature. Simulations and obtained results indicate that the proposed CFA is superior when compared with these algorithms.

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