Year	2021
Journal	Archives of Computational Methods in Engineering
Title	Ant lion optimizer: a comprehensive survey of its variants and applications
Authors	Laith Abualigah, Mohammad Shehab, Mohammad Alshinwan, Seyedali Mirjalili, Mohamed Abd Elaziz
Abstract	This paper introduces a comprehensive overview of the Ant Lion Optimizer (ALO). ALO is a novel metaheuristic swarm-based approach introduced by Mirjalili in 2015 to emulate the hunting behavior of ant lions in nature life. The review is highlighted the applications that are utilized ALO algorithm to solve various optimization problems. In ALO, the best solution is determined to enhance the performance of the functional and efficient during the optimization process by finding the minimum or maximum values to solve a certain problem. Metaheuristic algorithms have become the focus of research due to introduce of decision-making and asses the benefits in solving various optimization problems. Also, a review of ALO variants is presented in this paper such as binary, modification, hybridization, enhanced, and others. The classifications of the ALO's applications include the benchmark functions, machine learning applications, networks applications, engineering applications, software engineering, and Image processing. Finally, according to the reviewed papers published in the literature, the ALO algorithm is mostly utilized in solving various optimization problems. Presenting an overview and reviewing the ALO applications are the main aims of this review paper.