Abstract

New Artificial Human Optimization (AHO) Field Algorithms can be created from scratch or by adding the concept of Artificial Humans into other existing Optimization Algorithms. Particle Swarm Optimization (PSO) has been very popular for solving complex optimization problems due to its simplicity. In this work, new Artificial Human Optimization Field Algorithms are created by modifying existing PSO algorithms with AHO Field Concepts. These Hybrid PSO Algorithms come under PSO Field as well as AHO Field. There are Hybrid PSO research articles based on Human Behavior, Human Cognition and Human Thinking etc. But there are no Hybrid PSO articles which based on concepts like Human Disease, Human Kindness and Human Relaxation. This paper proposes new AHO Field algorithms based on these research gaps. Some existing Hybrid PSO algorithms are given a new name in this work so that it will be easy for future AHO researchers to find these novel Artificial Human Optimization Field Algorithms. A total of 6 Artificial Human Optimization Field algorithms titled "Human Safety Particle Swarm Optimization (HuSaPSO)", "Human Kindness Particle Swarm Optimization (HKPSO)", “Human Relaxation Particle Swarm Optimization (HRPSO)”, “Multiple Strategy Human Particle Swarm
Optimization (MSHPSO)", “Human Thinking Particle Swarm Optimization (HTPSO)” and “Human Disease Particle Swarm Optimization (HDPSO)” are tested by applying these novel algorithms on Ackley, Beale, Bohachevsky, Booth and Three-Hump Camel Benchmark Functions. Results obtained are compared with PSO algorithm.

References


29. https://www.sfu.ca/~ssurjano/optimization.html

Index Terms

Computer Science Algorithms

Keywords
Artificial Humans, Artificial Human Optimization Field, Particle Swarm Optimization, Genetic Algorithms, Hybrid Algorithms, Global Optimization Techniques, Nature Inspired Computing, Bio-Inspired Computing, Artificial Intelligence, Machine Learning Highlights World’s First Hybrid PSO algorithm based on Human Kindness is proposed in this paper. World’s First Hybrid PSO algorithm based on Human Relaxation is proposed in this paper World’s First Hybrid PSO algorithm based on Human Disease is proposed in this paper Made corrections to previous work under AHO Field in the Introduction Section of the paper A Novel Section “Interesting Findings in Artificial Human Optimization Field” is present in this article Some existing Hybrid PSO algorithms are given a new name in this paper