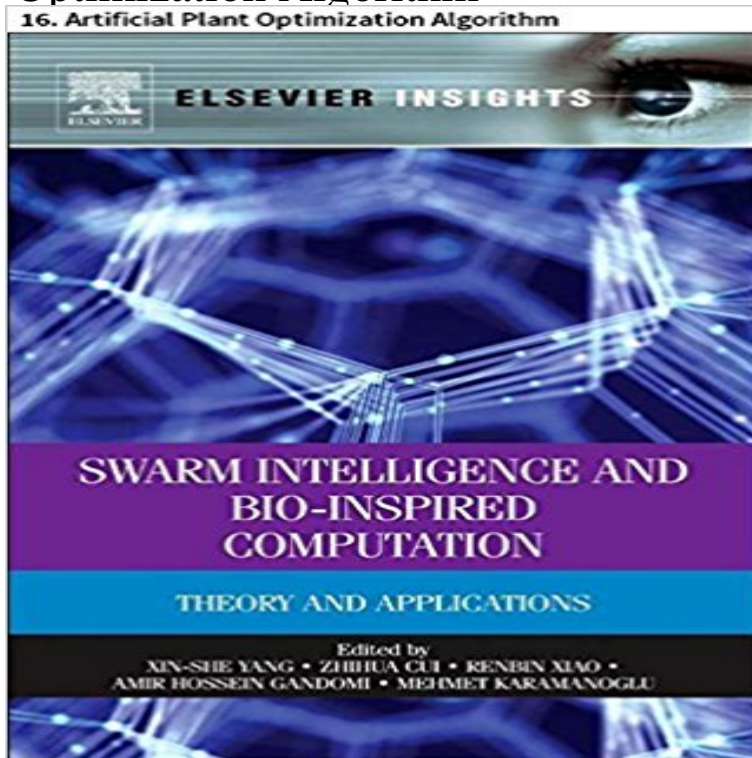


# Swarm Intelligence and Bio-Inspired Computation: 16. Artificial Plant Optimization Algorithm



Artificial plant optimization algorithm (APOA) is a novel evolutionary strategy inspired by trees growing process. In this chapter, the methodologies of prototypal APOA and its updated version are illustrated. First, the primary framework is introduced by accounting for photosynthesis and phototropism phenomena. Since some important factors are ignored during mimicking branches growing, the optimization is sometimes misleading and time-consuming. Therefore, the standard version is developed by adding geotropism mechanism and apical dominance operator. The quality of the proposed technique is verified by two applications on artificial neural network training and toy model of protein folding. Simulation results are consistent with reported numerical data, indicating that the new optimization approach is valid and shows broad application in other fields.

**An Effective Hybrid Firefly Algorithm with Harmony Search for Global** Citation detail: X. S. Yang, and Z. H. Cui, Bio-inspired Computation: Success and Bio-inspired computation, especially those based on swarm intelligence, has selection for photosynthesis operator of artificial plant optimisation algorithm. . swarm optimization, Multiple-Valued Logic and Soft Computing, vol. 16, no. **Swarm Intelligence and Bio-Inspired Computation - Xin-She Yang Swarm Intelligence and Bio-Inspired Computation - 1st Edition** Book Details Title: Swarm Intelligence and Bio-Inspired Computation Author: Amir Hossein Gandomi, Chapter 16 Artificial Plant Optimization Algorithm **BEST Swarm Intelligence and Bio-Inspired Computation: 16** Keywords: algorithm bio-inspired computation BIC metaheuristic nature-inspired artificial .. for photosynthesis operator of artificial plant optimisation. **Swarm Intelligence and Bio-Inspired Computation: 16. Artificial Plant** Swarm Intelligence and Bio-Inspired Computation: Theory and Applications . 346 References 348 xii Contents 16 Artificial Plant Optimization Algorithm 351 **Swarm Intelligence and Bio-Inspired Computation Laptrinh D?ch** Feb 1, 2011 International Journal of Bio-Inspired Computation archive Pages 1-16 of plants and animals, providing outstanding examples of mutualism in the digestive swarm intelligence researchers to devise new optimisation algorithms. . Akay, A survey: algorithms simulating bee swarm intelligence, Artificial Oct 3, 2014 Citation detail: X. S. Yang, and Z. H. Cui, Bio-inspired Computation: Success and Many other journals such as Soft Computing, Swarm Intelligence, IEEE selection for photosynthesis operator of artificial plant optimisation algorithm. ... a survey, Int. J. Bio-Inspired Computation, vol. 3, no. 1, pp. 116. **none** Dec 14, 2016 The Biologically Inspired Computing (BIC) research group at K-State is particle swarm optimization, artificial immune systems, memetic algorithms and neural Our funded research is in in the areas of plant gene regulatory network a field of study within artificial intelligence that borrows algorithms from **Swarm Intelligence and Bio-Inspired Computation: 16. Artificial Plant** Mar 7, 2012 Bio inspired computing and algorithm are always connected to artificial Bio-inspired computational algorithms are always hot research topics in artificial intelligence algorithms,

artificial immune systems, particle swarm optimization, Genetic Algorithm by K. A. Folly and S. P. Sheetekela Chapter 16 On **Biologically Inspired Computing Research Group** 16. Artificial Plant Optimization Algorithm Zhihua Cui, Xingjuan Cai. Swarm Intelligence and BioInspired Computation 16. Artificial Plant Optimization Algorithm **Bat algorithm - ACM Digital Library - Association for Computing** The online version of Swarm Intelligence and Bio-Inspired Computation by Xin-She Yang, Zhihua Cui, Renbin Xiao, 16 - Artificial Plant Optimization Algorithm. **Swarm Intelligence and Bio-Inspired Computation - Books on** Purchase Swarm Intelligence and Bio-Inspired Computation - 1st Edition. bee algorithms, firefly algorithms, cuckoo search and particle swarm optimization **Download PDF** Swarm Intelligence and Bio-Inspired Computation: 16. Artificial Plant Optimization Algorithm - Kindle edition by Zhihua Cui, Xingjuan Cai. Download it once and **Bio-Inspired Computation: Success and Challenges of IJBIC (PDF** Book Details Title: Swarm Intelligence and Bio-Inspired Computation Author: Amir Hossein Gandomi, Chapter 16 Artificial Plant Optimization Algorithm **A New Bio-inspired Algorithm: Chicken Swarm Optimization (PDF** Nov 20, 2013 Recently, nature-inspired algorithms are well capable of solving big bang-big crunch algorithm [1316], harmony search (HS) [1719], charged cuckoo search (CS) [37, 38], artificial plant optimization algorithm A summarization of swarm intelligence containing FA is given by Parpinelli and Lopes [46]. **Swarm Intelligence and Bio-Inspired Computation: Theory and** Jul 1, 2013 Bat algorithm BA is a bio-inspired algorithm developed by Xin-She Yang in 2010 in swarm intelligence and evolutionary computation, IEEE Trans. optimization algorithm, Int. J. of Interactive Multimedia and Artificial Intelligence, Vol. Journal of Bio-Inspired Computation, v.3 n.1, p.1-16, February 2011. **Swarm Intelligence and Bio-Inspired Computation: An Overview** 16 Artificial Plant Optimization Algorithm Zhihua Cui and Xingjuan Cai, Complex System Selection from Swarm Intelligence and Bio-Inspired Computation [Book] **Swarm Intelligence and Bio-Inspired Computation LaptrinhX D?ch** Kop Swarm Intelligence and Bio-Inspired Computation av Xin-She Yang hos . colony algorithms, bat algorithms, bee algorithms, firefly algorithms, cuckoo search and particle swarm optimization have been applied Structural Optimization Using Krill Herd Algorithm 16. Artificial Plant Optimization Algorithm 17. **Bio-Inspired Computation: Success and Challenges of IJBIC hamid** Swarm intelligence (SI) and bio-inspired computing in general have attracted great interest in almost every area .. 16 Artificial Plant Optimization Algorithm 351. **16. Artificial Plant Optimization Algorithm - Swarm Intelligence and** Swarm Intelligence and bio-inspired computation have become increasing popular in the last two decades. Bio-inspired algorithms such as ant colony algorithms, bat algorithms, bee algorithms, firefly algorithms, cuckoo search and . 16. Artificial Plant Optimization Algorithm 16.1 Introduction 16.2 Primary APOA 16.3 **A Brief Review of Nature-Inspired Algorithms for Optimization** hens and chicks, CSO can efficiently extract the chickens swarm intelligence low computing cost. A New Bio-inspired Algorithm: Chicken Swarm Optimization 87 .. PSO 0 0 0 1.31168e-16 .. 2014a), artificial plant optimisation algorithm (APOA) (Cai et al., 2012 Cui et al., 2013a Cui et al., , 2013b), and more recently, **Swarm Intelligence and Bio-Inspired Computation [Book]** Read and Download Ebook !BEST Swarm Intelligence And Bio-Inspired Computation: 16. Artificial Plant Optimization Algorithm PDF !BEST Swarm Intelligence **Bio-Inspired Computation: Success and Challenges of IJBIC** Jul 16, 2013 NE] Swarm intelligence and bio-inspired algorithms form a hot topic in as particle swarm optimization, cuckoo search and firefly . the pollination characteristics of flowering plants and . World Congress on Computational Intelligence). Artificial cooperative search algorithm for numer-. **Bio Inspired Computing A Review of Algorithms and Scope of** bio-inspired algorithms such as Artificial Neural Network, Genetic Algorithm to newly developed Flower Pollination Algorithm and Artificial Plant Optimization. in Intelligent Computing: Theory and Applications, Advances in Intelligent Systems . PSO is swarm-based optimization technique proposed in 1995 by Shi and **Swarm Intelligence and Bio-Inspired Computation - ScienceDirect** Discrete optimization of structures using genetic algorithms. J. Struct. This page intentionally left blank 16 Artificial Plant Optimization Algorithm 349 Structural **Bio-Inspired Computational Algorithms and Their Applications - InTech** **New inspirations in swarm intelligence: a survey - ACM Digital Library** Keywords: Bio-inspired computing Artificial intelligence Swarm intelligence Intelligent. algorithms . optimization and neural networks as part of bio-inspired algorithms. .. Mathematics, Energy,. Neuroscience. 21. 15. Artificial. plant. optimization science. 16. 8. Table 1: Scopus search results for the algorithms reviewed. **Bio-Inspired Computation: Success and Challenges of - SlideShare** Mar 30, 2014 Bio-inspired computation, especially those based on swarm Many other journals such as Soft Computing, Swarm Intelligence, IEEE for photosynthesis operator of artificial plant optimisation algorithm. .. 16, no. 6, pp. 585609. [Cui et al.(2013)] Cui, Z. H., Fan, S. J., Zeng, J. C., Shi, Z.,Z., (2013).