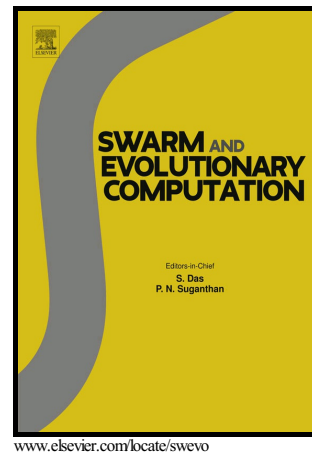


Author's Accepted Manuscript

A survey of swarm intelligence for dynamic optimization: algorithms and applications

Michalis Mavrovouniotis, Changhe Li, Shengxiang Yang



PII: S2210-6502(16)30254-1
DOI: <http://dx.doi.org/10.1016/j.swevo.2016.12.005>
Reference: SWEVO247

To appear in: *Swarm and Evolutionary Computation*

Received date: 8 September 2016
Revised date: 19 December 2016
Accepted date: 31 December 2016

Cite this article as: Michalis Mavrovouniotis, Changhe Li and Shengxiang Yang
A survey of swarm intelligence for dynamic optimization: algorithms and
applications, *Swarm and Evolutionary Computation*,
<http://dx.doi.org/10.1016/j.swevo.2016.12.005>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and a review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

A survey of swarm intelligence for dynamic optimization: algorithms and applications

Michalis Mavrovouniotis^a, Changhe Li^{b,*}, Shengxiang Yang^c

^a*School of Science and Technology, Nottingham Trent University, Nottingham, NG11 8NS, United Kingdom*

^b*School of Automation, China University of Geosciences, Wuhan 430074, China*

^c*Centre for Computational Intelligence (CCI), School of Computer Science and Informatics, De Montfort University, The Gateway, Leicester LE1 9BH, United Kingdom*

Abstract

Swarm intelligence (SI) algorithms, including ant colony optimization, particle swarm optimization, bee-inspired algorithms, bacterial foraging optimization, firefly algorithms, fish swarm optimization and many more, have been proven to be good methods to address difficult optimization problems under stationary environments. Most SI algorithms have been developed to address stationary optimization problems and hence, they can converge on the (near-) optimum solution efficiently. However, many real-world problems have a dynamic environment that changes over time. For such dynamic optimization problems (DOPs), it is difficult for a conventional SI algorithm to track the changing optimum once the algorithm has converged on a solution. In the last two decades, there has been a growing interest of addressing DOPs using SI algorithms due to their adaptation capabilities. This paper presents a broad review on SI dynamic optimization (SIDO) focused on several classes of problems, such as discrete, continuous, constraint, multi-objective and classification, and real-world applications. In addition, this paper focuses on the enhancement strategies integrated in SI algorithms to address dynamic changes, the performance measurements and benchmark generators used in SIDO. Finally, some considerations about future directions in the subject are given.

Keywords: Swarm intelligence, Dynamic optimization, Ant colony optimization, Particle swarm optimization

*Corresponding author

Email addresses: mmavrovouniotis@dmu.ac.uk (Michalis Mavrovouniotis), changhe.lw@gmail.com (Changhe Li), syang@dmu.ac.uk (Shengxiang Yang)

Download English Version:

<https://daneshyari.com/en/article/4962835>

Download Persian Version:

<https://daneshyari.com/article/4962835>

[Daneshyari.com](https://daneshyari.com)