

< Back to results | 1 of 28 Next >

→ Export ↓ Download 🖨️ Print ✉️ E-mail Save to PDF ☆ Add to List More... >

[Full Text](#) View at Publisher

Indonesian Journal of Electrical Engineering and Computer Science
Volume 11, Issue 1, July 2018, Pages 300-307

Comparison of swarm intelligence algorithms for high dimensional optimization problems (Article)

Bashath, S. ✉️, Ismail, A.R. 👤

Department of Computer Science, Kulliyah of Information and Communication Technology, International Islamic University Malaysia, P.O. Box 10, Kuala Lumpur, Malaysia

Abstract

∨ View references (23)

High dimensional optimization considers being one of the most challenges that face the algorithms for finding an optimal solution for real-world problems. These problems have been appeared in diverse practical fields including business and industries. Within a huge number of algorithms, selecting one algorithm among others for solving the high dimensional optimization problem is not an easily accomplished task. This paper presents a comprehensive study of two swarm intelligence based algorithms: 1-particle swarm optimization (PSO), 2-cuckoo search (CS). The two algorithms are analyzed and compared for problems consisting of high dimensions in respect of solution accuracy, and runtime performance by various classes of benchmark functions. © 2018 Institute of Advanced Engineering and Science. All rights reserved.

Author keywords

Cuckoo search High dimensional problem Swarm intelligence algorithms Particle swarm optimization

Funding details

Funding number	Funding sponsor	Acronym	Funding opportunities
	International Islamic University Malaysia	IIUM	

Funding text

This research was supported by the IIUM Research Initiative Grants Scheme (RIGS): RIGS16-346-0510 Hadramout Establishment for Human Development.

ISSN: 25024752

Source Type: Journal

Original language: English

DOI: 10.11591/ijeecs.v11.i1.pp300-307

Document Type: Article

Publisher: Institute of Advanced Engineering and Science

References (23)

View in search results format >

All Export 🖨️ Print ✉️ E-mail Save to PDF Create bibliography

Metrics ?

0 Citations in Scopus

0 Field-Weighted Citation Impact



PlumX Metrics ∨

Usage, Captures, Mentions, Social Media and Citations beyond Scopus.

Cited by 0 documents

Inform me when this document is cited in Scopus:

[Set citation alert >](#)

[Set citation feed >](#)

Related documents

A new cuckoo search

Lian, Z. , Lu, L. , Chen, Y. (2017) *IFIP Advances in Information and Communication Technology*

Optimal power allocation in wireless sensor networks using emerging nature-inspired algorithms

Tsiflikiotis, A. , Goudos, S.K. (2016) *2016 5th International Conference on Modern Circuits and Systems Technologies, MOCASST 2016*

Linear-phase FIR design using PSO method with Zero-phase Pre-design

Ngamtawee, R. , Wardkein, P. (2013) *2013 10th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology, ECTI-CON 2013*

View all related documents based on references

Find more related documents in Scopus based on:

- 1 Neumüller, C., Wagner, S., Kronberger, G., Affenzeller, M.
Parameter meta-optimization of metaheuristic optimization algorithms
(2012) *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 6927 LNCS (PART 1), pp. 367-374. Cited 10 times.
ISBN: 978-364227548-7
doi: 10.1007/978-3-642-27549-4_47
[View at Publisher](#)
-
- 2 Baghel, M., Agrawal, S., Silakari, S.
Survey of Metaheuristic Algorithms for Combinatorial Optimization
(2012) *International Journal of Computer Applications*, 58 (19), pp. 975-8887. Cited 17 times.
-
- 3 Singh, A., Jana, N.D.
A Survey on Metaheuristics for Solving Large Scale Optimization Problems
(2017) *International Journal of Computer Applications*, 170 (5), pp. 1-7.
-
- 4 Singh, A., Jana, N.D.
A Survey on Metaheuristics for Solving Large Scale Optimization Problems
(2017) *International Journal of Computer Applications*, 170 (5), pp. 1-7.
-
- 5 Nyarko, E.K., Cupec, R.
A Comparison of Several Heuristic Algorithms for Solving High Dimensional Optimization Problems
Preliminary Communication
(2014) *International Journal of Computer Applications*, 5 (1), pp. 1-8.
-
- 6 Yang, X.
Metaheuristic Optimization: Nature-Inspired Algorithms and Applications: In the Artificial Intelligence
(2013) *Evolutionary Computing and Metaheuristic Artificial Intelligence*, Berlin: Springer
-
- 7 Rajakumar, R., Dhavachelvan, P., Vengattaraman, T.
A survey on nature inspired meta-heuristic algorithms with its domain specifications
(2016) *Proceedings of the International Conference on Communication and Electronics Systems, ICCES 2016*, art. no. 7889811. Cited 3 times.
ISBN: 978-150901065-3
doi: 10.1109/CESYS.2016.7889811
[View at Publisher](#)
-
- 8 Yang, X.-S., Chien, S.F., Ting, T.O.
Computational intelligence and metaheuristic algorithms with applications
([Open Access](#))
(2014) *Scientific World Journal*, 2014, art. no. 425853. Cited 2 times.
<http://www.hindawi.com/journals/tswj/>
doi: 10.1155/2014/425853
[View at Publisher](#)
-

- 9 Ismail, I., Halim, A.H.
Comparative study of meta-heuristics optimization algorithm using benchmark function ([Open Access](#))
(2017) *International Journal of Electrical and Computer Engineering*, 7 (3), pp. 1643-1650. Cited 3 times.
<http://www.iaescore.com/journals/index.php/IJECE/article/view/6463/6544>
doi: 10.11591/ijece.v7i3.pp1643-1650
[View at Publisher](#)
-
- 10 Yang, X.-S.
Swarm intelligence based algorithms: A critical analysis
(2014) *Evolutionary Intelligence*, 7 (1), pp. 17-28. Cited 29 times.
doi: 10.1007/s12065-013-0102-2
[View at Publisher](#)
-
- 11 Mahdavi, S., Shiri, M.E., Rahnamayan, S.
Metaheuristics in large-scale global continues optimization: A survey
(2015) *Information Sciences*, 295, pp. 407-428. Cited 67 times.
<http://www.journals.elsevier.com/information-sciences/>
doi: 10.1016/j.ins.2014.10.042
[View at Publisher](#)
-
- 12 Latorre, A., Muelas, S., Pena, J.-M.
Large scale global optimization: Experimental results with MOS-based hybrid algorithms
(2013) *2013 IEEE Congress on Evolutionary Computation, CEC 2013*, art. no. 6557901, pp. 2742-2749. Cited 35 times.
ISBN: 978-147990454-9
doi: 10.1109/CEC.2013.6557901
[View at Publisher](#)
-
- 13 Ahmadnia, S., Tafahi, E.
Using Particle Swarm Optimization, Genetic Algorithm, Honey Bee Mating Optimization and Shuffle Frog Leaping Algorithm for Solving OPF Problem with their Comparison
(2015) *Indonesian Journal of Electrical Engineering and Computer Science*, 15 (3), pp. 445-451. Cited 3 times.
-
- 14 Al Haek, M., Ismail, A.R., Basalib, A.O.A., Makarim, N.
Exploring energy charging problem in swarm robotic systems using foraging simulation
(2015) *Jurnal Teknologi*, 76 (1), pp. 239-244. Cited 3 times.
<http://www.jurnalteknologi.utm.my/index.php/jurnalteknologi/article/download/4047/3635>
doi: 10.11113/jt.v76.4047
[View at Publisher](#)
-
- 15 Kennedy, James, Eberhart, Russell
Particle swarm optimization
(1995) *IEEE International Conference on Neural Networks - Conference Proceedings*, 4, pp. 1942-1948. Cited 31530 times.
[View at Publisher](#)
-

-
- 16 Attiya, A.J., Wenyu, Y., Shneen, S.W.
Compared with PI, Fuzzy-PI and PSO- PI Controllers of Robotic Grinding Force Servo System
(2016) *Indonesian Journal of Electrical Engineering and Computer Science*, 1 (1), pp. 65-74.
-
- 17 Poli, R., Kennedy, J., Blackwell, T.
Particle swarm optimization
(2007) *Swarm Intelligence*, 1 (1), pp. 33-57. Cited 1671 times.
-
- 18 Bansal, J.C., Singh, P.K., Saraswat, M., Verma, A., Jadon, S.S., Abraham, A.
Inertia weight strategies in particle swarm optimization

(2011) *Proceedings of the 2011 3rd World Congress on Nature and Biologically Inspired Computing, NaBIC 2011*, art. no. 6089659, pp. 633-640. Cited 144 times.
ISBN: 978-145771123-7
doi: 10.1109/NaBIC.2011.6089659

[View at Publisher](#)
-
- 19 Clerc, M., Kennedy, J.
The particle swarm-explosion, stability, and convergence in a multidimensional complex space

(2002) *IEEE Transactions on Evolutionary Computation*, 6 (1), pp. 58-73. Cited 5389 times.
doi: 10.1109/4235.985692

[View at Publisher](#)
-
- 20 Yang, X.-S., Deb, S.
Cuckoo search via Lévy flights

(2009) *2009 World Congress on Nature and Biologically Inspired Computing, NABIC 2009 - Proceedings*, art. no. 5393690, pp. 210-214. Cited 2038 times.
ISBN: 978-142445612-3
doi: 10.1109/NABIC.2009.5393690

[View at Publisher](#)
-
- 21 Yang, X.-S., Deb, S.
Cuckoo search: Recent advances and applications

(2014) *Neural Computing and Applications*, 24 (1), pp. 169-174. Cited 249 times.
doi: 10.1007/s00521-013-1367-1

[View at Publisher](#)
-
- 22 Chen, Q., Liu, B., Zhang, Q., Liang, J.
Evaluation Criteria for CEC 2015 Special Session and Competition on Bound Constrained Single-Objective Computationally Expensive Numerical Optimization
(2015) *China Aerodynamic Research and Development Center*
Glyndwr University, University of Essex, Zhengzhou University, Nanyang Technological University. March 2015
-
- 23 Ke, T., Xiaodong, L., Mohammad, O., Zhenyu, Y., Kai, Q.
(2013) *Benchmark Functions for the CEC'2013 Special Session and Competition on Large-Scale Global Optimization*, (1), pp. 1-21.
Tech report, Univ Sci Technol China
-

About Scopus

What is Scopus
Content coverage
Scopus blog
Scopus API
Privacy matters

Language

日本語に切り替える
切换到简体中文
切换到繁體中文
Русский язык

Customer Service

Help
Contact us

ELSEVIER

[Terms and conditions](#) [Privacy policy](#)

Copyright © 2018 Elsevier B.V. All rights reserved. Scopus® is a registered trademark of Elsevier B.V.

Cookies are set by this site. To decline them or learn more, visit our [Cookies page](#).

 RELX Group