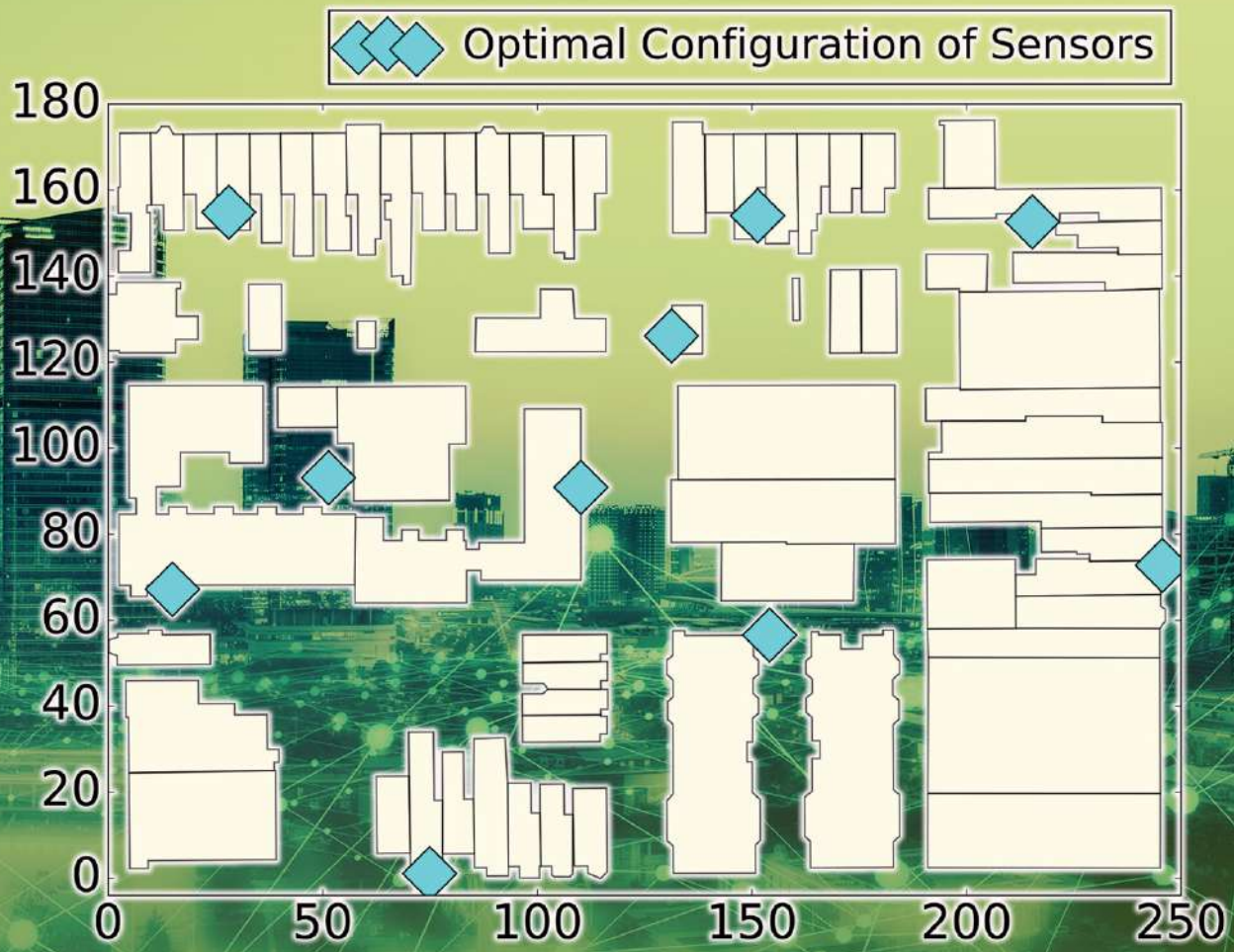
algorithms

COVERED BY EMERGING SOURCES CITATION INDEX CLARIVATE ANALYTICS

Indexed in: Ei Compendex



Surrogate-Based Robust Design for a Non-Smooth Radiation Source Detection Problem Available

Volume 12 · Issue 6 | June 2019

MDPI

mdpi.com/journal/algorithms
ISSN 1999-4893

algorithms

an Open Access Journal by MDPI

CITESCORE 2.2 SCOPUS

COVERED BY EMERGING SOURCES CITATION INDEX CLARIVATE ANALYTICS

Evolutionary Algorithms in Health Technologies

Guest Editors:

Dr. Steve Ling
University of Technology Sydney, Australia

Steve.Ling@uts.edu.au

Dr. Hak Keung Lam
Department of Engineering, King's College London, London WC2R 2LS, UK

hak-keung.lam@kcl.ac.uk

Deadline for manuscript submissions:
closed (15 May 2019)

Message from the Guest Editors

Dear Colleagues,

Health technology research brings together complementary interdisciplinary research skills in the development of innovative health technology applications. Recent research indicates that artificial intelligence can help achieve outstanding performance for particular types of health technology applications. Evolutionary algorithms is one of the subfields of artificial intelligence, and is an effective algorithm for global optimization inspired by biological evolution. With the rapidly growing complexity of design issues, methodologies and more demanding quality of health technology applications, the development of evolutionary computation algorithms for health has become timely and of high relevance. This Special Issue intends to bring together researchers to report the recent findings in evolutionary algorithms in health technology.

Dr. Steve Ling

Dr. Hak Keung Lam

Guest Editors

mdpi.com/si/18881

Special Issue

algorithms

an Open Access Journal by MDPI

Editor-in-Chief

Prof. Dr. Frank Werner
Faculty of Mathematics, Otto-von-Guericke-University, P.O. Box 4120, D-39016 Magdeburg, Germany

Message from the Editor-in-Chief

Algorithms are the very core of Computer Science. The whole area has been considered from quite different perspectives, having led to the development of many sub-communities: Complexity theory (limitations), approximation or parameterized algorithms (types of problems), geometric algorithms (subject area), metaheuristics, algorithm engineering, medical imaging (applications), indicates the range of perspectives. Our journal welcomes submissions written from any of these perspectives, so that it may become a forum for exchange of ideas between the corresponding scientific subcommunities.

Author Benefits

Open Access :— free for readers, with article processing charges (APC) paid by authors or their institutions.
High Visibility: indexed within Scopus, ESCI (Web of Science), Ei Compendex, MathSciNet and many other databases.
Journal Rank: CiteScore - Q2 (*Computational Theory and Mathematics*)

Contact Us

Algorithms
MDPI, St. Alban-Anlage 66
4052 Basel, Switzerland

Tel: +41 61 683 77 34
Fax: +41 61 302 89 18
www.mdpi.com

mdpi.com/journal/algorithms
algorithms@mdpi.com

algorithms

Submit to Algorithms

Review for Algorithms

Journal Menu

- Algorithms Home
- Aims & Scope
- Editorial Board
- Reviewer Board
- Topics Board
- Instructions for Authors
- Special Issues
- Sections
- Article Processing Charge
- Indexing & Archiving
- Journal Awards
- Society Collaborations
- Editorial Office

Algorithms, Volume 12, Issue 6 (June 2019) – 13 articles

Cover Story (view full-size image): In this investigation, we constructed a network of sensors to identify and reduce uncertainty in the location and intensity of possible nuclear sources inside a simulated 250 × 180 m block of an urban center. We employed a robust design method that eliminated dependence on the true source location and intensity and focused on an ED-optimal design, whose network solution maximizes the expected value of the determinant of the Fisher information matrix over the entire domain. We also employed a smooth radial basis function radiation transport model. The Fisher information ranking scores showed many optimal networks. The overall RMSE revealed that one of the optimal networks depicted here has more precision, identifying the nuclear source characteristics better than any other network in the average sense for a data set of 50 different sources. View this paper.

• Issues are regarded as officially published after their release is announced to the table of

Journal Browser

volume

issue

Go

Forthcoming issue
Current issue

Vol. 14 (2021)
Vol. 13 (2020)
Vol. 12 (2019)
Vol. 11 (2018)
Vol. 10 (2017)
Vol. 9 (2016)
Vol. 8 (2015)
Vol. 7 (2014)
Vol. 6 (2013)
Vol. 5 (2012)
Vol. 4 (2011)
Vol. 3 (2010)
Vol. 2 (2009)
Vol. 1 (2008)

Affiliated Society:

Order results: Publication Date | Result details: Normal

Show export options

Open Access | Correction

Correction: Sato, M., et al. Total Optimization of Energy Networks in a Smart City by Multi-Population Global-Best Modified Brain Storm Optimization with Migration, *Algorithms* 2019, *12*, 15

by Mayuko Sato, Yoshikazu Fukuyama, Tatsuya Iizaka and Tetsuro Matsui
Algorithms 2019, 12(6), 125; https://doi.org/10.3390/a12060125 - 21 Jun 2019
Viewed by 1729

Abstract The authors wish to make the following corrections to their paper[...] Full article

Open Access | Article

Lyndon Factorization Algorithms for Small Alphabets and Run-Length Encoded Strings

by Sukhpal Singh Ghuman, Emanuele Giaquinta and Jorma Tarhio
Algorithms 2019, 12(6), 124; https://doi.org/10.3390/a12060124 - 21 Jun 2019
Viewed by 1770

Abstract We present two modifications of Duval's algorithm for computing the Lyndon factorization of a string. One of the algorithms has been designed for strings containing runs of the smallest character. It works best for small alphabets and it is able to skip a [...] Read more.
(This article belongs to the Special Issue String Matching and Its Applications)

► Show Figures

Open Access | Review

On the Role of Clustering and Visualization Techniques in Gene Microarray Data

by Angelo Ciaramella and Antonino Staiano
Algorithms 2019, 12(6), 123; https://doi.org/10.3390/a12060123 - 18 Jun 2019
Cited by 4 | Viewed by 1813

Abstract As of today, bioinformatics is one of the most exciting fields of scientific research. There is a wide-ranging list of challenging problems to face, i.e., pairwise and multiple alignments, motif detection/discrimination/classification, phylogenetic tree reconstruction, protein secondary and tertiary structure prediction, protein function prediction, [...] Read more.

► Show Figures

Open Access | Article

A Hybrid Autoencoder Network for Unsupervised Image Clustering

by Pei-Yin Chen and Jih-Jeng Huang
Algorithms 2019, 12(6), 122; https://doi.org/10.3390/a12060122 - 18 Jun 2019
Cited by 4 | Viewed by 2499

Abstract Image clustering involves the process of mapping an archive image into a cluster such that the set of clusters has the same information. It is an important field of machine learning and computer vision. While traditional clustering methods, such as k-means or [...] Read more.

► Show Figures

Open Access | Article

Learning Output Reference Model Tracking for Higher-Order Nonlinear Systems with Unknown Dynamics

by Mircea-Bogdan Radac and Timotei Lala
Algorithms 2019, 12(6), 121; https://doi.org/10.3390/a12060121 - 12 Jun 2019
Cited by 7 | Viewed by 2003

Abstract This work suggests a solution for the output reference model (ORM) tracking control problem, based on approximate dynamic programming. General nonlinear systems are included in a control system (CS) and subjected to state feedback. By linear ORM selection, indirect CS feedback linearization is [...] Read more.
(This article belongs to the Special Issue Algorithms for PID Controller 2019)

► Show Figures

Open Access | Article

Integration of Production Planning and Scheduling Based on RTN Representation under Uncertainties

by Tao Zhang, Yue Wang, Xin Jin and Shan Lu
Algorithms 2019, 12(6), 120; https://doi.org/10.3390/a12060120 - 10 Jun 2019
Cited by 1 | Viewed by 1678

Abstract Production planning and scheduling are important bases for production decisions. Concerning the traditional modeling of production planning and scheduling based on Resource-Task Network (RTN) representation, uncertain factors such as utilities are rarely considered as constraints. For the production planning and scheduling problem based [...] Read more.

► Show Figures

Open Access | Article

The Role of Façade Materials in Blast-Resistant Buildings: An Evaluation Based on Fuzzy Delphi and Fuzzy EDAS

by Hamidreza Hashemiasah, Sarfaraz Hashemkhani Zolfani, Mahdi Bitaraftan, Prasenjit Chatterjee and Alireza Abbaspour Ezabadi
Algorithms 2019, 12(6), 119; https://doi.org/10.3390/a12060119 - 10 Jun 2019
Cited by 3 | Viewed by 1888

Abstract Blast-resistant buildings are mainly used to protect main instruments, controllers, expensive equipment, and people from explosion waves. Oil and gas industry projects almost always include blast-resistant buildings. For instance, based on a hazard identification (HAZID) and hazard and operability (HAZOP) analysis at a [...] Read more.
(This article belongs to the Special Issue Algorithms for Multi-Criteria Decision-Making)

► Show Figures

Open Access | Article

Deep Learning with a Recurrent Network Structure in the Sequence Modeling of Imbalanced Data for ECG-Rhythm Classifier

by Annisa Darmawahyuni, Siti Nurmaini, Sukemi, Wahyu Caesarendra, Vicko Bhayyu, M Naufal Rachmatullah and Firdaus
Algorithms 2019, 12(6), 118; https://doi.org/10.3390/a12060118 - 07 Jun 2019
Cited by 13 | Viewed by 2357

Abstract The interpretation of Myocardial Infarction (MI) via electrocardiogram (ECG) signal is a challenging task. ECG signals' morphological view show significant variation in different patients under different physical conditions. Several learning algorithms have been studied to interpret MI. However, the drawback of machine learning [...] Read more.
(This article belongs to the Special Issue Evolutionary Algorithms in Health Technologies)

► Show Figures

Open Access | Article

Iterative Numerical Scheme for Non-Isothermal Two-Phase Flow in Heterogeneous Porous Media

by Mohamed E. El-Amin
Algorithms 2019, 12(6), 117; https://doi.org/10.3390/a12060117 - 06 Jun 2019
Cited by 1 | Viewed by 1607

Abstract In the current paper, an iterative algorithm is developed to simulate the problem of two-phase flow with heat transfer in porous media. The convective body force caused by heat transfer is described by Boussinesq approximation throughout with the governing equations, namely, pressure, saturation, [...] Read more.

► Show Figures