INFORMATION SCIENCES

Informatics and Computer Science Intelligent Systems Applications

AUTHOR INFORMATION PACK

TABLE OF CONTENTS

ISSN: 0020-0255

- **Description** **p.1**
- **Audience** **p.2**
- **Impact Factor** **p.2**
- **Abstracting and Indexing** **p.2**
- **Editorial Board** **p.2**
- **Guide for Authors** **p.5**

DESCRIPTION

Information Sciences will publish original, innovative and creative research results. A smaller number of timely tutorial and surveying contributions will be published from time to time.

The journal is designed to serve researchers, developers, managers, strategic planners, graduate students and others interested in state-of-the art research activities in **information**, **knowledge engineering** and **intelligent systems**. Readers are assumed to have a common interest in **information science**, but with diverse backgrounds in fields such as engineering, mathematics, statistics, physics, computer science, cell biology, molecular biology, management science, cognitive science, neurobiology, behavioural sciences and biochemistry.

The journal publishes high-quality, refereed articles. It emphasizes a balanced coverage of both theory and practice. It fully acknowledges and vividly promotes a breadth of the discipline of Informations Sciences.

Topics include:

Foundations of Information Science:
Information Theory, Mathematical Linguistics, Automata Theory, Cognitive Science, Theories of Qualitative Behaviour, Artificial Intelligence, Computational Intelligence, Soft Computing, Semiotics, Computational Biology and Bio-informatics.

Implementations and Information Technology:
Intelligent Systems, Genetic Algorithms and Modelling, Fuzzy Logic and Approximate Reasoning, Artificial Neural Networks, Expert and Decision Support Systems, Learning and Evolutionary Computing, Expert and Decision Support Systems, Learning and Evolutionary Computing, Biometrics, Moleculoid Nanocomputing, Self-adaptation and Self-organisational Systems, Data Engineering, Data Fusion, Information and Knowledge, Adaptive ad Supervisory Control, Discrete Event Systems, Symbolic / Numeric and Statistical Techniques, Perceptions and Pattern Recognition, Design of Algorithms, Software Design, Computer Systems and Architecture Evaluations and Tools, Human-Computer Interface, Computer Communication Networks and Modelling and Computing with Words

Applications:
Manufacturing, Automation and Mobile Robots, Virtual Reality, Image Processing and Computer Vision Systems, Photonics Networks, Genomics and Bioinformatics, Brain Mapping, Language and Search Engine Design, User-friendly Man Machine Interface, Data Compression and Text Abstraction and Summarization, Virtual Reality, Finance and Economics Modelling and Optimisation

Editor-in-Chief Witold Pedrycz can be reached at wpedrycz@ualberta.ca.

AUDIENCE

Workers pursuing basic investigations in the areas of information science focusing on informatics and computer science, intelligent systems, and applications.

IMPACT FACTOR

2013: 3.893 © Thomson Reuters Journal Citation Reports 2014

ABSTRACTING AND INDEXING

Current Contents
Energy Science and Technology
GEOBASE
INSPEC
PASCAL/INIST-CNRS
SCISEARCH
Science Citation Index
Social Scisearch
UnCover
Zentralblatt MATH
Ei Compendex
Inside Conferences
Information Science & Technology Abstracts
Arts & Humanities Search
Scopus

EDITORIAL BOARD

Editor-in-Chief:

W. Pedrycz, Department of Electrical and Computer Engineering, University of Alberta, 9107 - 116 Street, Edmonton, T6G 2V4, Alberta, Canada

Special Issue Editor:

P.P. Wang, Dept. of Electrical Engin., Duke University, P.O. Box 90291, Durham, NC 27708-0291, North Carolina, USA

Associate Editors:

A. Adamatzky, University of the West of England, Bristol, UK
R. Aliev, Azerbaijan State Oil Academy, Baku, Azerbaijan
A. Bargiela, Nottingham, Nottingham, UK
A. Bretto, Université de Caen Basse Normandie, Caen Cedex, France
F. Buccafurri, Università Mediterranea di Reggio Calabria, Reggio Calabria, Italy
G. Castellano, Università degli Studi di Bari, Bari, Italy
O. Castillo, Tijuana Institute of Technology, Tijuana, Mexico
S.-M. Chen, National Taichung University of Education, Taichung, Taiwan, ROC
Y.-P. Chen, National Chiao Tung University, Hsinchu City, Taiwan
F. Chiclana, De Montfort University, Leicester, England, UK
T.-M. Choi, The Hong Kong Polytechnic University, Hong Kong, China
D. Ciucci, Università degli Studi di Milano-Bicocca, Milano, Italy
A. Cuzzocrea, Università della Calabria, Rende, Italy
P. D'Urso, Università di Roma "La Sapienza", Rome, Italy
S. Das, Indian Statistical Institute, Kolkata, India
M. Droste, Universität Leipzig, Leipzig, Germany
P. Ekel, Pontifícia Universidade Católica de Minas Gerais, Belo Horizonte, Brazil
S. Ferilli, Università degli Studi di Bari, Bari, Italy
M.A. Gil, Universidad de Oviedo, Oviedo, Spain

G. Guo, Dalian University of Technology, Dalian, China
J.-M. Guo, National Taiwan University of Science and Technology, Taipei, Taiwan, ROC
P. Guo, Yokohama National University, Yokohama, Japan
P. Gupta, University of Delhi, Delhi, India
P.H. Guzzi, Università degli studi Magna Graecia di Catanzaro, Catanzaro, Italy
W.-S. Han, POSTECH, Pohang, South Korea
L. Hernandez-Encinas, Consejo Superior de Investigaciones Científicas (CSIC), Madrid, Spain
F. Herrera, Universidad de Granada, Granada, Spain
E. Herrera-Viedma, Universidad de Granada, Granada, Spain
W. Homenda, Warsaw University of Technology, Warsaw, Poland
E.R. Hruschka, Universidade de São Paulo (USP), São Carlos SP, Brazil
M. Jeon, Gwangju Institute of Science & Technology (GIST), Buk-gu Gwangju, South Korea
J. Kacprzyk, Polish Academy of Sciences, Warsaw, Poland
H. R. Karimi, Universitetet i Agder, Grimstad, Norway
S.-W. Kim, Hanyang University, Ansan, South Korea
R. Kruse, Otto-von-Guericke-Universität Magdeburg, Magdeburg, Germany
S. T.-W. Kwong, City University of Hong Kong, Kowloon Tong, Hong Kong
Z. Li, Xidian University, Xi'an, China
X. Liu, Dalian University of Technology, Dalian, China
F. Marcelloni, Università di Pisa, Pisa, Italy
U. Maulik, Jadavpur University, Parganas, India
J. Medina-Moreno, Universidad de Cadiz, Puerto Real, Spain
P. Melin, Tijuana Institute of Technology, Tijuana, Mexico
R. Mesiar, Slovak University of Technology, Bratislava, Czech Republic
S. Mitra, Indian Statistical Institute, Calcutta, India
Y. Mu, University of Wollongong, Wollongong, New South Wales, Australia
F. Neri, De Montfort University, Leicester, UK
F. Nie, University of Texas at Arlington, Arlington, Texas, USA
S.-K. Oh, University of Suwon
R. Palm, Örebro University, Örebro, Sweden
A. Petrosino, Università di Napoli "Parthenope", Napoli, Italy
S. Russel, George Washington University, Washington, District of Columbia, USA
M. Sato-Ilic, University of Tsukuba, Tsukuba, Japan
L. Shao, University of Sheffield, Sheffield, UK
P. Shi, University of Adelaide, Adelaide, South Australia, Australia
P. Siarry, Université Val-de-Marne (Paris XII), Creteil, France
A. Skowron, University of Warsaw, Warsaw, Poland
D. Slezak, Infobright Inc., Toronto, Ontario, Canada
M. Song, University of Washington, Seattle, Washington, USA
P.N. Suganthan, Nanyang Technological University, Singapore
P. Sussner, Universidade Estadual de Campinas (UNICAMP), Campinas, Brazil
J. H. Tang, Nanjing University of Science and Technology, Nanjing, China
D. Tao, Nanyang Technological University, Singapore, Singapore
Y. Tian, Queensland University of Technology, Brisbane, Queensland, Australia
M.K. Tiwari, IIT Kharagpur, Kharagpur, India
V. Torra, Consejo Superior de Investigaciones Científicas (CSIC), Bellaterra, Catalonia, Spain
D.H. Wang, La Trobe University, Melbourne, Victoria, Australia
M. Wang, National University of Singapore, Singapore, Singapore
X.-Z Wang, Hebei University, Baoding City, China
J. Watada, Waseda University, Fukuoka, Japan
L. Wu, Harbin Institute of Technology, Harbin, China
N Xiong, Colorado Technical University (CTU), Colorado Springs, Colorado, USA
X. Xu, National University of Defense Technology, Changsha, China
Y.Y. Yao, University of Regina, Regina, Saskatchewan, Canada
A.R. Yildiz, Bursa Technical University, Turkey
J. Zhao, Dalian University of Technology, Dalian, China
S. Zhong, The State University of New York at Buffalo, Buffalo, New York, USA
Q. Zhu, University of Michigan at Dearborn, Dearborn, Michigan, USA

Editorial Board:

H. Adeli, Ohio State University, Columbus, Ohio, USA
H.J. Caulfield, Alabama A & M University, Normal, USA
G. Chen, Tsinghua University, Beijing, China
H.D. Cheng, Utah State University, Logan, Utah, USA
F. Crestani, Università della Svizzera Italiana (USI), Lugano, Switzerland
D. Dubois, Université Paul Sabatier (Toulouse III), Toulouse, France
K. Elmagarmid, Purdue University, West Lafayette, Indiana, USA

T. Fukuda, Nagoya University, Nagoya, Japan
D.E. Goldberg, University of Illinois at Urbana-Champaign, Urbana, Illinois, USA
S. Gottwald, Universität Leipzig, Leipzig, Germany
S. Grossberg, Boston University, Boston, Massachusetts, USA
K. Hirota, Tokyo Institute of Technology, Yokohama, Japan
Y.C. Ho, Harvard University, Cambridge, Massachusetts, USA
N. Kasabov, Auckland University of Technology, Auckland, New Zealand
E.E. Kerre, Universiteit Gent, Gent, Belgium
B. Kosko, University of Southern California, Los Angeles, California, USA
D. Manivannan, University of Kentucky, Lexington, Kentucky, USA
S.K. Pal, Indian Statistical Institute, Calcutta, India
H. Prade, Université Paul Sabatier (Toulouse III), Toulouse, France
G. Succi, Libera Università di Bolzano, Bozen-Bolzano, Italy
A.V. Vasilakos, University of Western Macedonia, Kozani, Greece
B. Wah, University of Illinois at Urbana-Champaign, Champaign, Illinois, USA
F.-Y. Wang, Chinese Academy of Sciences (CAS), Beijing, China
K. Weber, EnBW Energie Baden-Württemberg AG, Karlsruhe, Germany
G. Weiss, Maastricht University, Maastricht, Netherlands
X. Yao, University of Birmingham, Edgbaston, Birmingham, UK
L.A. Zadeh, University of California at Berkeley, Berkeley, California, USA
D. Zhang, Hong Kong University of Science & Technology, Kowloon, Hong Kong
W. Wang, Dalian University of Technology, Dalian, China
M. Song, University of Washington, Seattle, Washington, USA
V. K. Bhargava, University of British Columbia, Vancouver, British Columbia, Canada

GUIDE FOR AUTHORS

INTRODUCTION

Information Sciences will publish original, innovative and creative research results. A smaller number of timely tutorial and surveying contributions will be published from time to time.

The journal is designed to serve researchers, developers, managers, strategic planners, graduate students and others interested in state-of-the art research activities in information, knowledge engineering and intelligent systems. Readers are assumed to have a common interest in information science, but with diverse backgrounds in fields such as engineering, mathematics, statistics, physics, computer science, cell biology, molecular biology, management science, cognitive science, neurobiology, behavioural sciences and biochemistry.

The journal publishes high-quality, refereed articles. It emphasizes a balanced coverage of both theory and practice. It fully acknowledges and vividly promotes a breadth of the discipline of Informations Sciences.

Topics include:

Foundations of Information Science
Information Theory, Mathematical Linguistics, Automata Theory, Cognitive Science, Theories of Qualitative Behaviour, Artificial Intelligence, Computational Intelligence, Soft Computing, Semiotics, Computational Biology and Bio-informatics.

Implementations and Information Technology
Intelligent Systems, Genetic Algorithms and Modelling, Fuzzy Logic and Approximate Reasoning, Artificial Neural Networks, Expert and Decision Support Systems, Learning and Evolutionary Computing, Expert and Decision Support Systems, Learning and Evolutionary Computing, Biometrics, Moleculoid Nanocomputing, Self-adaptation and Self-organisational Systems, Data Engineering, Data Fusion, Information and Knowledge, Adaptive ad Supervisory Control, Discrete Event Systems, Symbolic / Numeric and Statistical Techniques, Perceptions and Pattern Recognition, Design of Algorithms, Software Design, Computer Systems and Architecture Evaluations and Tools, Human-Computer Interface, Computer Communication Networks and Modelling and Computing with Words

Applications
Manufacturing, Automation and Mobile Robots, Virtual Reality, Image Processing and Computer Vision Systems, Photonics Networks, Genomics and Bioinformatics, Brain Mapping, Language and Search Engine Design, User-friendly Man Machine Interface, Data Compression and Text Abstraction and Summarization, Virtual Reality, Finance and Economics Modelling and Optimisation

Types of Paper

Original research work
As a guideline: experimental manuscripts should not be longer than 40 double-spaced typed pages and 8 figures + tables; for theoretical manuscripts a maximum of 45 pages and 10 figures + tables is suggested.

All manuscripts should be concisely written, stressing the motivation for, and the novel aspects of, the work. Contributions should contain an Abstract (of up to 200 words) and a Conclusions section, which particularly in the case of theoretical papers translates the results into terms readily accessible to most readers.

Contact details for submission

Manuscripts must be submitted online using the "Submit online to this journal" facility at the following website:
http://ees.elsevier.com/ins. Submission by other means, such as a postal submission, must receive prior approval from the Principal Editor. Authors should provide suggestions for 3 preferred referees (N.B., referee names should not be taken from the Editorial or Associate Editorial Board of the journal). However, we cannot guarantee that any referees suggested will be used.

BEFORE YOU BEGIN

Ethics in publishing

For information on Ethics in publishing and Ethical guidelines for journal publication see http://www.elsevier.com/publishingethics and http://www.elsevier.com/journal-authors/ethics.

Conflict of interest

All authors are requested to disclose any actual or potential conflict of interest including any financial, personal or other relationships with other people or organizations within three years of beginning the submitted work that could inappropriately influence, or be perceived to influence, their work. See also http://www.elsevier.com/conflictsofinterest. Further information and an example of a Conflict of Interest form can be found at: http://help.elsevier.com/app/answers/detail/a_id/286/p/7923.

Submission declaration and verification

Submission of an article implies that the work described has not been published previously (except in the form of an abstract or as part of a published lecture or academic thesis or as an electronic preprint, see http://www.elsevier.com/postingpolicy), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in English or in any other language, including electronically without the written consent of the copyright-holder. To verify originality, your article may be checked by the originality detection service CrossCheck http://www.elsevier.com/editors/plagdetect.

Contributors

Each author is required to declare his or her individual contribution to the article: all authors must have materially participated in the research and/or article preparation, so roles for all authors should be described. The statement that all authors have approved the final article should be true and included in the disclosure.

Changes to authorship

This policy concerns the addition, deletion, or rearrangement of author names in the authorship of accepted manuscripts:

Before the accepted manuscript is published in an online issue: Requests to add or remove an author, or to rearrange the author names, must be sent to the Journal Manager from the corresponding author of the accepted manuscript and must include: (a) the reason the name should be added or removed, or the author names rearranged and (b) written confirmation (e-mail, fax, letter) from all authors that they agree with the addition, removal or rearrangement. In the case of addition or removal of authors, this includes confirmation from the author being added or removed. Requests that are not sent by the corresponding author will be forwarded by the Journal Manager to the corresponding author, who must follow the procedure as described above. Note that: (1) Journal Managers will inform the Journal Editors of any such requests and (2) publication of the accepted manuscript in an online issue is suspended until authorship has been agreed.

After the accepted manuscript is published in an online issue: Any requests to add, delete, or rearrange author names in an article published in an online issue will follow the same policies as noted above and result in a corrigendum.

Copyright

This journal offers authors a choice in publishing their research: Open access and Subscription.

For subscription articles

Upon acceptance of an article, authors will be asked to complete a 'Journal Publishing Agreement' (for more information on this and copyright, see http://www.elsevier.com/copyright). An e-mail will be sent to the corresponding author confirming receipt of the manuscript together with a 'Journal Publishing Agreement' form or a link to the online version of this agreement.

Subscribers may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions. Permission of the Publisher is required for resale or distribution outside the institution and for all other derivative works, including compilations and translations (please consult http://www.elsevier.com/permissions). If excerpts from other copyrighted works are included, the author(s) must obtain written permission from the copyright owners and credit the source(s) in the article. Elsevier has preprinted forms for use by authors in these cases: please consult http://www.elsevier.com/permissions.

For open access articles

Upon acceptance of an article, authors will be asked to complete an 'Exclusive License Agreement' (for more information see http://www.elsevier.com/OAauthoragreement). Permitted reuse of open access articles is determined by the author's choice of user license (see http://www.elsevier.com/openaccesslicenses).

Retained author rights
As an author you (or your employer or institution) retain certain rights. For more information on author rights for:
Subscription articles please see http://www.elsevier.com/journal-authors/author-rights-and-responsibilities.
Open access articles please see http://www.elsevier.com/OAauthoragreement.

Role of the funding source
You are requested to identify who provided financial support for the conduct of the research and/or preparation of the article and to briefly describe the role of the sponsor(s), if any, in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the article for publication. If the funding source(s) had no such involvement then this should be stated.

Funding body agreements and policies
Elsevier has established agreements and developed policies to allow authors whose articles appear in journals published by Elsevier, to comply with potential manuscript archiving requirements as specified as conditions of their grant awards. To learn more about existing agreements and policies please visit http://www.elsevier.com/fundingbodies.

Open access
This journal offers authors a choice in publishing their research:

Open access
• Articles are freely available to both subscribers and the wider public with permitted reuse
• An open access publication fee is payable by authors or their research funder
Subscription
• Articles are made available to subscribers as well as developing countries and patient groups through our access programs (http://www.elsevier.com/access)
• No open access publication fee

All articles published open access will be immediately and permanently free for everyone to read and download. Permitted reuse is defined by your choice of one of the following Creative Commons user licenses:
Creative Commons Attribution (CC BY): lets others distribute and copy the article, to create extracts, abstracts, and other revised versions, adaptations or derivative works of or from an article (such as a translation), to include in a collective work (such as an anthology), to text or data mine the article, even for commercial purposes, as long as they credit the author(s), do not represent the author as endorsing their adaptation of the article, and do not modify the article in such a way as to damage the author's honor or reputation.
Creative Commons Attribution-NonCommercial-ShareAlike (CC BY-NC-SA): for non-commercial purposes, lets others distribute and copy the article, to create extracts, abstracts and other revised versions, adaptations or derivative works of or from an article (such as a translation), to include in a collective work (such as an anthology), to text and data mine the article, as long as they credit the author(s), do not represent the author as endorsing their adaptation of the article, do not modify the article in such a way as to damage the author's honor or reputation, and license their new adaptations or creations under identical terms (CC BY-NC-SA).
Creative Commons Attribution-NonCommercial-NoDerivs (CC BY-NC-ND): for non-commercial purposes, lets others distribute and copy the article, and to include in a collective work (such as an anthology), as long as they credit the author(s) and provided they do not alter or modify the article.

To provide open access, this journal has a publication fee which needs to be met by the authors or their research funders for each article published open access.
Your publication choice will have no effect on the peer review process or acceptance of submitted articles.

The open access publication fee for this journal is **$3100**, excluding taxes. Learn more about Elsevier's pricing policy: http://www.elsevier.com/openaccesspricing.

Language (usage and editing services)

Please write your text in good English (American or British usage is accepted, but not a mixture of these). Authors who feel their English language manuscript may require editing to eliminate possible grammatical or spelling errors and to conform to correct scientific English may wish to use the English Language Editing service available from Elsevier's WebShop (http://webshop.elsevier.com/languageediting/) or visit our customer support site (http://support.elsevier.com) for more information.

Submission

Submission to this journal proceeds totally online and you will be guided stepwise through the creation and uploading of your files. The system automatically converts source files to a single PDF file of the article, which is used in the peer-review process. Please note that even though manuscript source files are converted to PDF files at submission for the review process, these source files are needed for further processing after acceptance. All correspondence, including notification of the Editor's decision and requests for revision, takes place by e-mail removing the need for a paper trail.

Referees

Please submit the names and institutional e-mail addresses of several potential referees. For more details, visit our Support site. Note that the editor retains the sole right to decide whether or not the suggested reviewers are used.

PREPARATION

Use of word processing software

It is important that the file be saved in the native format of the word processor used. The text should be in single-column format. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. In particular, do not use the word processor's options to justify text or to hyphenate words. However, do use bold face, italics, subscripts, superscripts etc. When preparing tables, if you are using a table grid, use only one grid for each individual table and not a grid for each row. If no grid is used, use tabs, not spaces, to align columns. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier: http://www.elsevier.com/guidepublication). Note that source files of figures, tables and text graphics will be required whether or not you embed your figures in the text. See also the section on Electronic artwork.
To avoid unnecessary errors you are strongly advised to use the 'spell-check' and 'grammar-check' functions of your word processor.

LaTeX

You are recommended to use the Elsevier article class *elsarticle.cls* (http://www.ctan.org/tex-archive/macros/latex/contrib/elsarticle) to prepare your manuscript and BibTeX (http://www.bibtex.org) to generate your bibliography.
For detailed submission instructions, templates and other information on LaTeX, see http://www.elsevier.com/latex.

Article structure

Subdivision - numbered sections
Divide your article into clearly defined and numbered sections. Subsections should be numbered 1.1 (then 1.1.1, 1.1.2, ...), 1.2, etc. (the abstract is not included in section numbering). Use this numbering also for internal cross-referencing: do not just refer to 'the text'. Any subsection may be given a brief heading. Each heading should appear on its own separate line.

Introduction
State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results.

Material and methods
Provide sufficient detail to allow the work to be reproduced. Methods already published should be indicated by a reference: only relevant modifications should be described.

Theory/calculation
A Theory section should extend, not repeat, the background to the article already dealt with in the Introduction and lay the foundation for further work. In contrast, a Calculation section represents a practical development from a theoretical basis.

Results
Results should be clear and concise.

Discussion
This should explore the significance of the results of the work, not repeat them. A combined Results and Discussion section is often appropriate. Avoid extensive citations and discussion of published literature.

Conclusions
The main conclusions of the study may be presented in a short Conclusions section, which may stand alone or form a subsection of a Discussion or Results and Discussion section.

Vitae
Include in the manuscript a short (maximum 100 words) biography of each author, along with a passport-type photograph accompanying the other figures.

Essential title page information

• ***Title.*** Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible.
• ***Author names and affiliations.*** Where the family name may be ambiguous (e.g., a double name), please indicate this clearly. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-case superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name and, if available, the e-mail address of each author.
• ***Corresponding author.*** Clearly indicate who will handle correspondence at all stages of refereeing and publication, also post-publication. **Ensure that phone numbers (with country and area code) are provided in addition to the e-mail address and the complete postal address. Contact details must be kept up to date by the corresponding author.**
• ***Present/permanent address.*** If an author has moved since the work described in the article was done, or was visiting at the time, a 'Present address' (or 'Permanent address') may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

Abstract

A concise and factual abstract is required. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

Highlights

Highlights are a short collection of bullet points that convey the core findings of the article. Highlights are optional and should be submitted in a separate file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point). See http://www.elsevier.com/highlights for examples.

Keywords

Immediately after the abstract, provide a maximum of 6 keywords, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

Acknowledgements

Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

Math formulae

Present simple formulae in the line of normal text where possible and use the solidus (/) instead of a horizontal line for small fractional terms, e.g., X/Y. In principle, variables are to be presented in italics. Powers of e are often more conveniently denoted by exp. Number consecutively any equations that have to be displayed separately from the text (if referred to explicitly in the text).

Footnotes

Footnotes should be used sparingly. Number them consecutively throughout the article, using superscript Arabic numbers. Many wordprocessors build footnotes into the text, and this feature may be used. Should this not be the case, indicate the position of footnotes in the text and present the footnotes themselves separately at the end of the article. Do not include footnotes in the Reference list.

Table footnotes

Indicate each footnote in a table with a superscript lowercase letter.

Artwork

Electronic artwork

General points

- Make sure you use uniform lettering and sizing of your original artwork.
- Embed the used fonts if the application provides that option.
- Aim to use the following fonts in your illustrations: Arial, Courier, Times New Roman, Symbol, or use fonts that look similar.
- Number the illustrations according to their sequence in the text.
- Use a logical naming convention for your artwork files.
- Provide captions to illustrations separately.
- Size the illustrations close to the desired dimensions of the printed version.
- Submit each illustration as a separate file.

A detailed guide on electronic artwork is available on our website:
http://www.elsevier.com/artworkinstructions

You are urged to visit this site; some excerpts from the detailed information are given here.

Formats

If your electronic artwork is created in a Microsoft Office application (Word, PowerPoint, Excel) then please supply 'as is' in the native document format.

Regardless of the application used other than Microsoft Office, when your electronic artwork is finalized, please 'Save as' or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):

EPS (or PDF): Vector drawings, embed all used fonts.

TIFF (or JPEG): Color or grayscale photographs (halftones), keep to a minimum of 300 dpi.

TIFF (or JPEG): Bitmapped (pure black & white pixels) line drawings, keep to a minimum of 1000 dpi.

TIFF (or JPEG): Combinations bitmapped line/half-tone (color or grayscale), keep to a minimum of 500 dpi.

Please do not:

- Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); these typically have a low number of pixels and limited set of colors;
- Supply files that are too low in resolution;
- Submit graphics that are disproportionately large for the content.

Color artwork

Please make sure that artwork files are in an acceptable format (TIFF (or JPEG), EPS (or PDF), or MS Office files) and with the correct resolution. If, together with your accepted article, you submit usable color figures then Elsevier will ensure, at no additional charge, that these figures will appear in color on the Web (e.g., ScienceDirect and other sites) regardless of whether or not these illustrations are reproduced in color in the printed version. **For color reproduction in print, you will receive information regarding the costs from Elsevier after receipt of your accepted article**. Please indicate your preference for color: in print or on the Web only. For further information on the preparation of electronic artwork, please see http://www.elsevier.com/artworkinstructions.

Please note: Because of technical complications that can arise by converting color figures to 'gray scale' (for the printed version should you not opt for color in print) please submit in addition usable black and white versions of all the color illustrations.

Figure captions
Ensure that each illustration has a caption. Supply captions separately, not attached to the figure. A caption should comprise a brief title (**not** on the figure itself) and a description of the illustration. Keep text in the illustrations themselves to a minimum but explain all symbols and abbreviations used.

Tables

Number tables consecutively in accordance with their appearance in the text. Place footnotes to tables below the table body and indicate them with superscript lowercase letters. Avoid vertical rules. Be sparing in the use of tables and ensure that the data presented in tables do not duplicate results described elsewhere in the article.

References

Citation in text
Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either 'Unpublished results' or 'Personal communication'. Citation of a reference as 'in press' implies that the item has been accepted for publication and a copy of the title page of the relevant article must be submitted.

Reference links
Increased discoverability of research and high quality peer review are ensured by online links to the sources cited. In order to allow us to create links to abstracting and indexing services, such as Scopus, CrossRef and PubMed, please ensure that data provided in the references are correct. Please note that incorrect surnames, journal/book titles, publication year and pagination may prevent link creation. When copying references, please be careful as they may already contain errors. Use of the DOI is encouraged.

Web references
As a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, author names, dates, reference to a source publication, etc.), should also be given. Web references can be listed separately (e.g., after the reference list) under a different heading if desired, or can be included in the reference list.

References in a special issue
Please ensure that the words 'this issue' are added to any references in the list (and any citations in the text) to other articles in the same Special Issue.

Reference management software
This journal has standard templates available in key reference management packages EndNote (http://www.endnote.com/support/enstyles.asp) and Reference Manager (http://refman.com/support/rmstyles.asp). Using plug-ins to wordprocessing packages, authors only need to select the appropriate journal template when preparing their article and the list of references and citations to these will be formatted according to the journal style which is described below.

Reference formatting
There are no strict requirements on reference formatting at submission. References can be in any style or format as long as the style is consistent. Where applicable, author(s) name(s), journal title/book title, chapter title/article title, year of publication, volume number/book chapter and the pagination must be present. Use of DOI is highly encouraged. The reference style used by the journal will be applied to the accepted article by Elsevier at the proof stage. Note that missing data will be highlighted at proof stage for the author to correct. If you do wish to format the references yourself they should be arranged according to the following examples:

Reference Style

References on the reference list must be ordered alphabetically. In the text, refer to them using square brackets, for example: "... and Chang and Weaver [1] show ...," etc.
The style of references:
(a) Journal papers: L.A. Zadeh, Toward a generalized theory of uncertainty (GTU)– an outline, Information Sciences 172 (2005) 1–40.
(b) Books: W. Pedrycz, F. Gomide, Introduction to Fuzzy Sets, MIT Press, Cambridge, MA, 1998.

(c) Conference proceedings: D. Poole, What the lottery paradox tells us about default reasoning, In: H.J. Levesque, R.J. Brachman, R. Reiter (Eds.), Proc. 1st Int. Conf. Principles of Knowledge Representation and Reasoning, KR'89, Morgan Kaufmann, Sn Mateo, CA, 1989, pp. 333–340.

Note: In the case of multiple authorship all authors should be listed in the references provided they number less than ten. Only in the case of more than 10 authors is "first author et al." acceptable.

Journal abbreviations source
Journal names should be abbreviated according to the List of Title Word Abbreviations: http://www.issn.org/services/online-services/access-to-the-ltwa/.

Video data

Elsevier accepts video material and animation sequences to support and enhance your scientific research. Authors who have video or animation files that they wish to submit with their article are strongly encouraged to include links to these within the body of the article. This can be done in the same way as a figure or table by referring to the video or animation content and noting in the body text where it should be placed. All submitted files should be properly labeled so that they directly relate to the video file's content. In order to ensure that your video or animation material is directly usable, please provide the files in one of our recommended file formats with a preferred maximum size of 50 MB. Video and animation files supplied will be published online in the electronic version of your article in Elsevier Web products, including ScienceDirect: http://www.sciencedirect.com. Please supply 'stills' with your files: you can choose any frame from the video or animation or make a separate image. These will be used instead of standard icons and will personalize the link to your video data. For more detailed instructions please visit our video instruction pages at http://www.elsevier.com/artworkinstructions. Note: since video and animation cannot be embedded in the print version of the journal, please provide text for both the electronic and the print version for the portions of the article that refer to this content.

AudioSlides

The journal encourages authors to create an AudioSlides presentation with their published article. AudioSlides are brief, webinar-style presentations that are shown next to the online article on ScienceDirect. This gives authors the opportunity to summarize their research in their own words and to help readers understand what the paper is about. More information and examples are available at http://www.elsevier.com/audioslides. Authors of this journal will automatically receive an invitation e-mail to create an AudioSlides presentation after acceptance of their paper.

Supplementary data

Elsevier accepts electronic supplementary material to support and enhance your scientific research. Supplementary files offer the author additional possibilities to publish supporting applications, high-resolution images, background datasets, sound clips and more. Supplementary files supplied will be published online alongside the electronic version of your article in Elsevier Web products, including ScienceDirect: http://www.sciencedirect.com. In order to ensure that your submitted material is directly usable, please provide the data in one of our recommended file formats. Authors should submit the material in electronic format together with the article and supply a concise and descriptive caption for each file. For more detailed instructions please visit our artwork instruction pages at http://www.elsevier.com/artworkinstructions.

Supplementary data

***NEW* INLINE SUPPLEMENTARY COMPUTER CODE**
Elsevier now offers you the possibility to place supplementary computer code, data snippets, algorithms and other machine readable structures at the right place in your online article in reusable .txt format. This will allow readers to easily view this material in the appropriate context, and to directly copy it to the clipboard or download the original source file for testing or re-use. If you would like to have reusable "computer code" inserted into the body of your online article please indicate in your manuscript where they should be placed and number them in order of appearance, e.g. "Insert Inline Supplementary Computer Code 1 here". To support discoverability and reusability please submit these items in *.txt format and make sure to include a descriptive title and caption that references the characteristics and the appropriate environment of this material , e.g. 'An algorithm for filtering text files in R' . For more information please visit http://www.elsevier.com/ism

Interactive plots

This journal encourages you to include data and quantitative results as interactive plots with your publication. To make use of this feature, please include your data as a CSV (comma-separated values) file when you submit your manuscript. Please refer to http://www.elsevier.com/interactiveplots for further details and formatting instructions.

Submission checklist

The following list will be useful during the final checking of an article prior to sending it to the journal for review. Please consult this Guide for Authors for further details of any item.

Ensure that the following items are present:

One author has been designated as the corresponding author with contact details:

• E-mail address
• Full postal address
• Phone numbers

All necessary files have been uploaded, and contain:

• Keywords
• All figure captions
• All tables (including title, description, footnotes)

Further considerations

• Manuscript has been 'spell-checked' and 'grammar-checked'
• References are in the correct format for this journal
• All references mentioned in the Reference list are cited in the text, and vice versa
• Permission has been obtained for use of copyrighted material from other sources (including the Web)
• Color figures are clearly marked as being intended for color reproduction on the Web (free of charge) and in print, or to be reproduced in color on the Web (free of charge) and in black-and-white in print
• If only color on the Web is required, black-and-white versions of the figures are also supplied for printing purposes

For any further information please visit our customer support site at http://support.elsevier.com.

AFTER ACCEPTANCE

Use of the Digital Object Identifier

The Digital Object Identifier (DOI) may be used to cite and link to electronic documents. The DOI consists of a unique alpha-numeric character string which is assigned to a document by the publisher upon the initial electronic publication. The assigned DOI never changes. Therefore, it is an ideal medium for citing a document, particularly 'Articles in press' because they have not yet received their full bibliographic information. Example of a correctly given DOI (in URL format; here an article in the journal *Physics Letters B*):

http://dx.doi.org/10.1016/j.physletb.2010.09.059

When you use a DOI to create links to documents on the web, the DOIs are guaranteed never to change.

Proofs

One set of page proofs (as PDF files) will be sent by e-mail to the corresponding author (if we do not have an e-mail address then paper proofs will be sent by post) or, a link will be provided in the e-mail so that authors can download the files themselves. Elsevier now provides authors with PDF proofs which can be annotated; for this you will need to download Adobe Reader version 9 (or higher) available free from http://get.adobe.com/reader. Instructions on how to annotate PDF files will accompany the proofs (also given online). The exact system requirements are given at the Adobe site: http://www.adobe.com/products/reader/tech-specs.html.

If you do not wish to use the PDF annotations function, you may list the corrections (including replies to the Query Form) and return them to Elsevier in an e-mail. Please list your corrections quoting line number. If, for any reason, this is not possible, then mark the corrections and any other comments (including replies to the Query Form) on a printout of your proof and return by fax, or scan the pages and e-mail, or by post. Please use this proof only for checking the typesetting, editing, completeness and correctness of the text, tables and figures. Significant changes to the article as accepted for publication will only be considered at this stage with permission from the Editor. We will do everything possible to get your article published quickly and accurately – please let us have all your corrections within 48 hours. It is important to ensure that all corrections are sent back to us in one communication: please check carefully before replying, as inclusion of any subsequent corrections cannot be guaranteed. Proofreading is solely your responsibility. Note that Elsevier may proceed with the publication of your article if no response is received.

Offprints

The corresponding author, at no cost, will be provided with a personalized link providing 50 days free access to the final published version of the article on ScienceDirect. This link can also be used for sharing via email and social networks. For an extra charge, paper offprints can be ordered via the offprint order form which is sent once the article is accepted for publication. Both corresponding and co-authors may order offprints at any time via Elsevier's WebShop (http://webshop.elsevier.com/myarticleservices/offprints). Authors requiring printed copies of multiple articles may use Elsevier WebShop's 'Create Your Own Book' service to collate multiple articles within a single cover (http://webshop.elsevier.com/myarticleservices/booklets).

AUTHOR INQUIRIES

You can track your submitted article at http://help.elsevier.com/app/answers/detail/a_id/89/p/8045/. You can track your accepted article at http://www.elsevier.com/trackarticle. You are also welcome to contact Customer Support via http://support.elsevier.com.

© Copyright 2014 Elsevier | http://www.elsevier.com