



ARTIFICIAL INTELLIGENCE

An International Journal

AUTHOR INFORMATION PACK

TABLE OF CONTENTS

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



ISSN: 0004-3702

DESCRIPTION

Artificial Intelligence, which commenced publication in 1970, is now the generally accepted premier international forum for the publication of results of current research in this field. The journal welcomes foundational and applied papers describing mature work involving computational accounts of aspects of **intelligence**. Specifically, it welcomes papers on:

Artificial Intelligence and Philosophy Automated reasoning and inference Case-based reasoning Cognitive aspects of AI Commonsense reasoning Constraint processing Heuristic search High-level computer vision Intelligent interfaces Intelligent robotics Knowledge representation Machine learning Multiagent systems Natural language processing Planning and theories of action Reasoning under uncertainty or imprecision

The journal reports results achieved; proposals for new ways of looking at **AI** problems must include demonstrations of effectiveness. Papers describing systems or architectures integrating multiple technologies are welcomed. *Artificial Intelligence (AIJ)* also invites papers on applications, which should describe a principled solution, emphasize its novelty, and present an in-depth evaluation of the AI techniques being exploited. The journal publishes an annual issue devoted to survey articles and also hosts a "competition section" devoted to reporting results from AI competitions. From time to time, there are special issues devoted to a particular topic; such special issues always have open calls.

Artificial Intelligence caters to a broad readership. Papers that are heavily mathematical in content are welcome but should be preceded by a less technical introductory section that is accessible to a wide audience. Papers that are only mathematics, without demonstrated applicability to Artificial Intelligence problems may be returned.

Benefits to authors

We also provide many author benefits, such as free PDFs, a liberal copyright policy, special discounts on Elsevier publications and much more. Please click here for more information on our [author services](#).

Please see our [Guide for Authors](#) for information on article submission. If you require any further information or help, please visit our support pages: <http://support.elsevier.com>

AUDIENCE

Artificial Intelligence Specialists, Computer Scientists, Cognitive Scientists, Psychologists, Linguists - all both 'pure' and 'applied'. Sponsored Articles: Artificial Intelligence offers authors or their institutions the option to sponsor non-subscriber access to their articles on Elsevier's electronic publishing platforms. For more information please click <http://www.elsevier.com/wps/find/authorshome.authors/artinthere>.

IMPACT FACTOR

2013: 2.709 © Thomson Reuters Journal Citation Reports 2014

ABSTRACTING AND INDEXING

ACM Computing Reviews
Applied Science & Technology Abstracts
Applied Science and Technology Index
CAD/CAM Abstracts
CompuScience
Cambridge Scientific Abstracts
Computer Abstracts
Current Contents/Engineering, Computing & Technology
Current Contents/Social & Behavioral Sciences
Information Science Abstracts
Mathematical Reviews
Engineering Index
INSPEC Information Services
Science Citation Index
Social Sciences Citation Index
Sociological Abstracts
Zentralblatt MATH
Scopus

EDITORIAL BOARD

Editors-in-Chief:

R. Dechter, University of California at Irvine, Irvine, California, USA
P. Doherty, Linköping University, Linköping, Sweden

Review Editors:

R. Goebel, University of Alberta, Edmonton, Alberta, Canada
G. De Giacomo, Università di Roma "La Sapienza", Rome, Italy

Competition Editor:

G. Lakemeyer, RWTH Aachen University (RWTH), Aachen, Germany
G. De Giacomo, Università di Roma "La Sapienza", Rome, Italy

Associate Editors:

F. Baader, Technische Universität Dresden, Dresden, Germany
F. Bacchus, University of Toronto, Toronto, Ontario, Canada
C. Bessiere, Lab. d'Informatique de Montpellier, Montpellier, France
B. Bonet, Universidad Simon Bolivar, Caracas, Venezuela
R.I. Brafman, Ben Gurion University of the Negev, Beer-Sheva, Israel
G. Brewka, Universität Leipzig, Leipzig, Germany
A.G. Cohn, University of Leeds, England, UK
L. De Raedt, KU Leuven, Heverlee, Belgium
J. P. Delgrande, Simon Fraser University, Burnaby, British Columbia, Canada
P.M. Dung, Asian Institute of Technology, Pathumthani, Thailand
S. Edelkamp, Universität Bremen, Bremen, Germany
T. Eiter, Technische Universität Wien, Wien, Austria
U. Endriss, Universiteit van Amsterdam, Amsterdam, Netherlands

M. Fox, King's College London, London, UK
P. Frasconi, Università degli Studi di Firenze, Firenze, Italy
A. Galton, University of Exeter, Exeter, UK
H. Geffner, Universitat Pompeu Fabra (UPF), Barcelona, Spain
A.E. Gerevini, Università degli Studi di Brescia, Brescia, Italy
Y. Gil, University of Southern California, Marina del Rey, California, USA
E. Giunchiglia, Università degli Studi di Genova, Genova, Italy
E. Hansen, Mississippi State University, Mississippi State, Mississippi, USA
B. Hnich, Izmir University of Economics, Izmir, Turkey
P. Husbands, University of Sussex, Brighton, UK
T. Jansen, Aberystwyth University, Aberystwyth, Wales, UK
R. Khardon, Tufts University, Medford, Massachusetts, USA
C. Knoblock, University of Southern California, Marina del Rey, California, USA
J. Lang, Université Paris-Dauphine, Paris Cedex 16, France
K. Leyton-Brown, University of British Columbia, Vancouver, Canada
F. Lin, Hong Kong University of Science & Technology, Clear Water Bay, Kowloon, Hong Kong
R. Lopez de Mantaras, The Artificial Intelligence Research Institute (IIIA), Bellaterra, Catalonia, Spain
R. Navigli, Università di Roma "La Sapienza", Rome, Italy
D. Poole, University of British Columbia, Vancouver, Canada
F. Rossi, Università degli Studi di Padova, Padova, Italy
T. Sandholm, Carnegie Mellon University, Pittsburgh, Pennsylvania, USA
D. Schuurmans, University of Alberta, Edmonton, Alberta, Canada
C. Sierra, IIIA, Bellaterra - Catalonia, Spain
R. Simmons, Carnegie Mellon University, Pittsburgh, Pennsylvania, USA
J. M. Siskind, Purdue University, West Lafayette, Indiana, USA
M. Stone, Rutgers University, Piscataway, New Jersey, USA
P. Stone, University of Texas at Austin, Austin, Texas, USA
P. Struss, Technische Universität München, Garching, München, Germany
R. Sutton, University of Alberta, Edmonton, Alberta, Canada
S. Thiebaut, National ICT Australia (NICTA), Canberra, Australian Capital Territory, Australia
J. Tian, Iowa State University, Ames, Iowa, USA
M. Truszczyński, University of Kentucky, Lexington, Kentucky, USA
P. van Beek, University of Waterloo, Waterloo, Ontario, Canada
F. van Harmelen, Vrije Universiteit Amsterdam, Amsterdam, Netherlands
P. Van Hentenryck, University of Melbourne, Parkville, Victoria, Australia
L.D. Whitley, Colorado State University, Fort Collins, Colorado, USA
M. Wooldridge, University of Liverpool, Liverpool, England, UK
M. Ying, Tsinghua University, Beijing, China
M. Yokoo, Kyushu University, Fukuoka, Japan
M. Zakharyashev, Birkbeck, University of London, London, England, UK
W. Zhang, Washington University in St. Louis, St. Louis, Missouri, USA
I. Zukerman, Monash University, Clayton, Victoria, Australia

Other Editorial Board Members:

D. Cohen, Royal Holloway, University of London, Egham, England, UK
V. Conitzer, Duke University, Durham, North Carolina, USA
F.G. Cozman, Universidade de São Paulo (USP), São Paulo, Brazil
E. Davis, New York University, New York, New York, USA
C. Domshlak, Technion - Israel Institute of Technology, Haifa, Israel
P. Dunne, University of Liverpool, Liverpool, England, UK
E. Elkind, Nanyang Technological University, Singapore, Singapore
H. Fargier, Université Paul Sabatier (Toulouse III), Toulouse, France
A. Felner, Ben Gurion University of the Negev, Beer Sheva, Israel
A. Fern, Oregon State University, Corvallis, Oregon, USA
M. Gelfond, Texas Tech University, Lubbock, Texas, USA
M. Gini, University of Minnesota, Minneapolis, USA
L. Godo, Consejo Superior de Investigaciones Científicas (CSIC), Madrid, Spain
R. Greiner, University of Alberta, Edmonton, Alberta, Canada
J. Hoffmann, Universität des Saarlandes, Saarbrücken, Germany
A. Hunter, University College London (UCL), London, England, UK
A. Ihler, University of California at Irvine, Irvine, California, USA
M. Jaeger, Aalborg University, Aalborg Øst, Denmark
H. Kautz, University of Rochester, Rochester, New York, USA
K. Kersting, University of Bonn, Bonn, Germany; Fraunhofer (IAIS), Sankt Augustin, Germany
S. Koenig, University of Southern California, Los Angeles, California, USA
K. Larson, University of Waterloo, Waterloo, Ontario, Canada
T. Lukasiewicz, University of Oxford, Oxford, England, UK

M. Mataric, University of Southern California, Los Angeles, California, USA
T. Meyer, University of KwaZulu-Natal (UKZN), Pretoria, South Africa
S. Moral, Universidad de Granada, Granada, Spain
M. Mueller, University of Alberta, Edmonton, Alberta, Canada
C. Pelachaud, Centre National de la Recherche Scientifique (CNRS), Paris, France
G. Provan, University College Cork, Cork, Ireland
F. Scarcello, Università della Calabria, Rende, Italy
T. Schaub, Universität Potsdam, Potsdam, Germany
T. Schiex, INRA Centre de Toulouse, Castanet Tolosan, France
T. C. Son, New Mexico State University, Las Cruces, New Mexico, USA
N. Sturtevant, University of Denver, Denver, Colorado, USA
M. Thielscher, UNSW Australia, Sydney, Australia
L. Travé-Massuyès, LAAS-CNRS, Toulouse, France
M.-A. Williams, University of Technology Sydney, Sydney, New South Wales, Australia
N. Wilson, University College Cork, Cork, Ireland

GUIDE FOR AUTHORS

INTRODUCTION

The journal *Artificial Intelligence (AIJ)* welcomes basic and applied papers describing mature work involving computational accounts of aspects of intelligence that is both complete and novel. The question of whether a paper is complete is ultimately determined by reviewers and editors on a case-by-case basis. Generally, a paper should include all relevant proofs and/or experimental data, a thorough discussion of connections with the existing literature, and a convincing discussion of the motivations and implications of the presented work. A paper is novel if the results it describes were not previously published by other authors, and were not previously published by the same authors in any archival journal. In particular, a previous conference publication by the same authors does not disqualify a submission on the grounds of novelty. However, it is rarely the case that conference papers satisfy the completeness criterion without the addition of new material. Indeed, even prize winning papers from major conferences often undergo major revision following referee comments before being accepted to AIJ.

AIJ welcomes papers on: *AI and Philosophy, automated reasoning and inference, case-based reasoning, cognitive aspects of AI, commonsense reasoning, constraint processing, heuristic search, high-level computer vision, intelligent interfaces, intelligent robotics, knowledge representation, machine learning, multiagent systems, natural language processing, planning and theories of action, reasoning under uncertainty or imprecision.*

The journal reports results achieved; proposals for new ways of looking at AI problems must include demonstrations of effectiveness. Papers describing systems or architectures integrating multiple technologies are welcomed. AIJ also invites papers on applications, which should describe a principled solution, emphasize its novelty, and present an in-depth evaluation of the AI techniques being exploited. The journal publishes an annual issue devoted to survey articles and also hosts a "competition section" devoted to reporting results from AI competitions. From time to time, there are special issues devoted to a particular topic; such special issues will always feature open calls-for-papers. Guidance on the submission of proposals for special issues, as well as other material for authors and reviewers can be found at <http://www.aijd.org>.

Artificial Intelligence caters to a broad readership. Papers that are heavily mathematical in content are welcome but should be preceded by a less technical introductory section that is accessible to a wide audience. Papers that are only mathematics, without demonstrated applicability to Artificial Intelligence problems may be returned: a discussion of the work's implications on the production of artificially intelligent systems is normally expected.

Types of Paper

Manuscript Length

There is no restriction on the length of submitted manuscripts. However, authors should note that publication of lengthy papers, typically greater than forty pages, is often significantly delayed, as the length of the paper acts as a disincentive to the reviewer to undertake the review process. Unedited theses are acceptable only in exceptional circumstances. Editing a thesis into a journal article is the author's responsibility, not the reviewer's.

Research Notes

The Research Notes section of the journal *Artificial Intelligence* will provide a forum for short communications with a quick turnaround for publication. The maximum length should not exceed 4500 words (typically a paper with 5 to 14 pages). The intention is that a note, if accepted, will have a guaranteed publication within one year of submission, aiming for 6-9 months. Some examples of suitable Research Notes include, but are not limited to the following:

- crisp technical research aimed at other specialists, e.g. a theorem or an experimental result; short position papers on AI methodologies or technologies;
- a critique of a position or claim made in the literature;
- an extension or addendum to an earlier published paper that presents additional experimental or theoretical results.

Communications, however, that merely report about ongoing or completed work rather than present technical content will not be considered for publication.

Reviews

The following types of contributions are currently published:

1. refereed book reviews;
2. refereed research field reviews;
3. refereed position papers (in the "Turing Tapes" section)

AI Journal Competition Section

Competition Section Papers will describe the competition, its criteria, why it is interesting to the AI research community, the results (including how they compare to previous rounds, if appropriate), and give a summary of the main technical contributions to the field manifested in systems participating in the competition. Papers may be supplemented by online appendices giving details of participants, problem statements, test scores, and even competition-related software. Acceptance criteria: although Competition Section Papers serve as an archival record of a competition, it is critical that they make clear why the competition's problems are relevant to continued progress in the area, what progress has been made since the previous competition, if applicable, and what were the most significant technical advances reflected in the competition results. The exposition should be accessible to a broad AI audience.

Contact Details for Submission

Full-length manuscripts and Research Notes must be submitted online using the "Submit online to this journal" facility at the following website: <http://ees.elsevier.com/artint>. Enquiries about papers submitted there should be made via the EES email function (preferably) or to aij.office@gmail.com. Enquiries about possible reviews should be sent to the Review Editors: Randy Goebel at rgoebel@ualberta.ca or Mary-Anne Williams at Mary-Anne@it.uts.edu.au. Queries related the Competition Section should be directed to the Competition Editor at aij.competition@gmail.com.

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.

Plagiarism

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), that it is not under consideration for publication elsewhere, that no article with substantially the same content will be submitted for publication elsewhere while it is under review by AIJ, 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, without the written consent of the copyright-holder.

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 **\$2400**, 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

Our online submission system guides you stepwise through the process of entering your article details and uploading your files. The system converts your article files to a single PDF file used in the peer-review process. Editable files (e.g., Word, LaTeX) are required to typeset your article for final publication. All correspondence, including notification of the Editor's decision and requests for revision, is sent by e-mail.

Referees

The editors of the journal Artificial Intelligence notify reviewers in advance that by accepting a manuscript for review they also accept an obligation to maintain confidentiality of the manuscript's contents; this obligation ends only when the manuscript becomes lawfully available to them through another channel without an obligation of confidentiality.

Revisions

It is the Journal's policy that, except in extenuating circumstances, only one revision of a submitted manuscript will be considered for publication in the Journal.

PREPARATION

Use of wordprocessing software

It is important that the file be saved in the native format of the wordprocessor 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 wordprocessor'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>). All figures and tables should be embedded in the text to facilitate reviewing. Please also supply the source files of figures, tables and text graphics. See also the section on Electronic illustrations. To avoid unnecessary errors you are strongly advised to use the "spell-check" and "grammar-check" functions of your wordprocessor.

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.

Appendices

If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

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 editable 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 10 keywords, 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.

Abbreviations

Define abbreviations that are not standard in this field in a footnote to be placed on the first page of the article. Such abbreviations that are unavoidable in the abstract must be defined at their first mention there, as well as in the footnote. Ensure consistency of abbreviations throughout the article.

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

Please submit math equations as editable text and not as images. Present simple formulae in line with 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. Many word processors can build footnotes into the text, and this feature may be used. Otherwise, please indicate the position of footnotes in the text and list the footnotes themselves separately at the end of the article. Do not include footnotes in the Reference list.

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

Submit colour illustrations as original photographs, high-quality computer prints or transparencies, close to the size expected in publication, or as 35 mm slides. Please make sure that artwork files are in an acceptable format (TIFF, EPS or MS Office files) and with the correct resolution. Polaroid colour prints are not suitable. If, together with your accepted article, you submit usable 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. Color illustrations will be printed in color if, in the opinion of the Editors, the color is essential. If this is not the case, you will receive information regarding the costs for colour reproduction in print 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 which can arise by converting colour figures to "grey 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

Please submit tables as editable text and not as images. Tables can be placed either next to the relevant text in the article, or on separate page(s) at the end. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table body. Be sparing in the use of tables and ensure that the data presented in them do not duplicate results described elsewhere in the article. Please avoid using vertical rules.

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.

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

All references are to be listed at the end of the paper in alphabetical order under the first author's name and numbered consecutively by arabic numbers. Chronological order is used if there is more than one publication by the same author or team of authors.

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.

The information provided under References must include:

- Journal papers: Names and initials of all authors, title of paper, journal name, volume number, issue number, year of publication, and first and last page numbers of the paper.

Example: W. Stallings, Local networks, *ACM Comput. Surveys* 16 (1) (1984) 3-41.

- Monographs: Names and initials of all authors, title of the monograph, publisher, publisher's residence, year of publication.

Example: A.S. Troelstra, D. van Dalen, *Constructivism in Mathematics*, North-Holland, Amsterdam, 1988.

- Edited volume papers: Names and initials of all authors, title of paper, names and initials of the volume editors, title of the edited volume, publisher, publisher's residence, year of publication, and first and last page numbers of the paper.

Example: K. Eda, T. Kiyosawa, H.Ohta, N-compactness and its applications, in: K. Morita, J. Nagata, (Eds.), *Topics in General Topology*, North-Holland, Amsterdam, 1989, pp. 65-78.

- Conference proceedings papers: Names and initials of all authors, title of paper, name of the conference, conference site and country (publisher, publisher's residence), year of publication, and first and last page numbers of the paper.

Example: E. Katona, Assembly-level programming of cellular processors, in: *Proceedings 3rd Workshop on Parallel Processing by Cellular Automata and Arrays*, Berlin, Germany, 1986, pp. 94-100.

- Unpublished papers: Names and initials of all authors, title of the article, and all other relevant information needed to identify the article (e.g., technical report, Ph.D. thesis, institute, year of compilation, etc.).

Example: J. Goldstine, Abstract families of languages generated by bounded languages, Ph.D. Thesis, University of California, Berkeley, CA, 1970.

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>.

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 Internet)

Printed version of figures (if applicable) in color or black-and-white

- Indicate clearly whether or not color or black-and-white in print is required.
- For reproduction in black-and-white, please supply black-and-white versions of the figures 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. 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.

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](http://www.sciencedirect.com). 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>