The Chicago Journal of Theoretical Computer Science
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The *Chicago Journal of Theoretical Computer Science* is a peer-reviewed scholarly journal in theoretical computer science. Articles are submitted and published in LaTeX source form, and distributed internationally over the InterNet. Articles are augmented by refereed forward references to improvements and subsequent related work. Readers may obtain articles through *FTP* and *HTTP* (*World Wide Web*). Other widely used network tools will be supported as they arise in the future. The *Journal* is committed to minimizing publication delays, and to promoting maximum flexibility in the ways that readers use the journal for teaching, research, and scholarship. Readers' license is limited only as required to insure fair attribution to authors and the journal, and to prohibit use in a competing commercial product.

1 What is a Published Article?

The definitive version of an article published in the *Chicago Journal of Theoretical Computer Science* is a LaTeX source file containing the text of the article, an accompanying BibTeX source file containing the bibliography, and optional encapsulated PostScript files containing drawings included in the article. The journal's copy editors prepare the source files for each article to present the logical structure of the article as clearly as possible, so as to maximize portability of the text, and to facilitate future development of browsing interfaces and information retrieval applications. Precompiled PostScript translations are provided for readers who cannot format LaTeX, or do not wish to, but the LaTeX source is the definitive copy.

Reader-Powered Publication

Electronically published journals have used a variety of different publication formats, including bitmapped page images, PostScript page layouts, typographical formats such as LaTeX, plain ASCII, and special proprietary formats closely integrated with browsing and information-retrieval software. Each of these choices favors different qualities of publication—for example, bitmaps, PostScript, and some proprietary formats give authors and publishers maximum control over the beauty of the final display, while plain ASCII requires the minimum equipment and skill on the part of the reader, etc. The publication format of the *Chicago Journal* is intended to maximize *readers' power* to use articles in whatever ways they find most productive. The problem is that we cannot anticipate precisely what readers will do, but we should assume at least that they display articles in a wide variety of typographical formats suited to their equipment, their paper or screen size, and their eyesight, and that they apply browsing and information-retrieval software acquired from other suppliers than MIT Press. To stretch our imaginations a bit, there is already experimental software providing audio browsing of LaTeX documents.

The way to maximize the power of readers in the long run, without precise knowledge of reader behavior, is to represent the logical structure of articles in the most transparent and easily parsable way that we can manage. SGML was designed precisely for this task, but it can also be done satisfactorily with a disciplined use of LaTeX. Furthermore, LaTeX supports the representation of mathematical formulae fairly well, and most of our reader and author community already has the software to typeset and display LaTeX. But, maximum power and flexibility for readers demands a certain amount of standardization in the *source* format of articles. Readers, and particularly readers' software packages, must be able to parse important components, such as sectional units, paragraphs, sentences, displayed subtexts such as theorems, easily and unambiguously. To provide this uniform clarity in the

LaTeX source, copy editors polish authors' manuscripts into a disciplined subset of LaTeX.

2 Subscribing to the *Journal*

If you would like to subscribe to the *Chicago Journal of Theoretical Computer Science,* please contact the MIT Press, using the form provided through World Wide Web at URL

`http://www-mitpress.mit.edu/jrnls-catalog/order.html`

or by sending email to `journals-orders@mit.edu`.

The object of publishing articles in the *Chicago Journal of Theoretical Computer Science* is to serve the community of scholarly readers by disseminating useful research results as effectively as possible. The format of the *Journal* is designed to maximize its value to individual readers, and the subscription policy is designed to maximize the number of readers.

MIT Press solicits subscriptions to the *Journal* from libraries and from individual readers at a modest cost calculated to provide sufficient financing for journal operations. The *Journal* does not control the way in which subscribers view articles. Each subscriber may choose to fetch articles idividually as needed, to copy the entire journal to a local database, to display articles on video terminals, to print articles, excerpts, groups of articles—to use the journal in whatever way is most effective for each individual reader's teaching, research and scholarship. Subscribers' license is limited only as required to insure fair attribution to authors and the journal, and prohibit use in a competing commercial product. Subscribers have immediate access to newly published articles, and archival access to old articles. In the distant future, if it is infeasible to keep the oldest articles online, there may be a charge for the cost of retrieving them. In the foreseeable future, all articles will be available online for direct access by readers.

While MIT Press expects readers to pay for use of the journal, the *Journal* is determined *not* to impose access restrictions that exclude nonpayers at the cost of making legitimate paid access more difficult. For more detail on the legitimate rights of readers, please see the copyright statement. We believe that the community of scholars will act in good faith to pay for a useful publication service, without annoying mechanisms to enforce payment. So, there are no passwords, no limits on the number of simultaneous readers in a library, no key servers. We will gather data about the way in which the *Journal* is used in order to make this operation a useful test case for planning future projects.

3 Selection and Publication of *Journal* Articles

The reviewing procedure for the *Chicago Journal of Theoretical Computer Science* is quite conventional. The editors take the advice of anonymous expert referees in order to decide whether a submitted article should be accepted, declined, or whether the author should revise the article in order to make it acceptable for publication. As much as possible, communication with referees is carried out electronically to speed the process.

The act of publication, on the other hand, is unconventional. Each article, as it is accepted and copy editing completed, is placed directly in a file server at MIT Press, and in alternate servers at the University of Chicago and Virginia Polytechnic Institute and State University. Articles are available through *HTTP* (*World Wide Web*) and anonymous *FTP*. Subscribing libraries and individuals may decide to create their own local servers. By taking advantage of this unconventional form of publication, which eliminates the queue of articles articles wating for the next issue as well as delays due to printing and mailing, and by careful attention to promptness in the conventional reviewing process, we hope to minimize the time from submission to appearance.

Archiving and Preserving the *Journal*

The value of journal publication depends critically on the preservation of articles for readers in the distant future, as well as the immediate dissemination to current readers. With conventional printed journals, the tasks of archiving and preservation are passed off from publishers to libraries. It is not clear yet what institutions will be the most effective archivers and preservers of electronically published materials, but it seems likely that publishers will play a larger role than they have with printed materials. MIT Press is committed to ensuring that articles published in the *Chicago Journal of Theoretical Computer Science* are preserved permanently and archived for access by scholars of the indefinite future.

It is not obvious what precise activities are required to ensure the preservation of electronically published articles. It is certainly not sufficient to preserve a specific physical medium, such as CD-ROM, since every such physical storage medium in existence today is sure to become obsolete in some decades. Even preservation of the bit patterns of articles may not be enough, since the standard formats and the software that supports them change over time (right now, LaTeX is changing into LaTeX2e as a standard for describing documents). The commitment to preserving the *Journal* includes a commitment to performing appropriate format conversions as necessary. For example, it is likely that LaTeX will eventually merge with some set of Document Types expressed in SGML, and that the form of presentation of source files will move from grammatically restricted ASCII to something like abstract data types or an object-oriented standard. Whatever standard formats for document presentation replace LaTeXin the future, articles in the *Chicago Journal of Theoretical Computer Science* will be converted to that format.

For the immediate future, *Journal* articles will be preserved by storing them online, and in offline backups, at at least three different sites: MIT, U. Chicago, and VPISU. Subscribing libraries and individuals are encouraged to maintain their own archives as well, providing additional security. In the distant future, if it becomes infeasible to maintain all articles online, the oldest ones may be relegated to offline archives, using whatever media are most attractive at the time. We cannot foresee the precise challenges to preservation that will arise, but neither did anyone foresee that printed materials would be subject to early disintegration due to acidic paper. The real source of security for all archived information is the intelligent commitment of the individuals and institutions that preserve it, not the static durability of the physical media on which it is represented.

Another unusual component of preserving electronically published materials is maintaining the authenticity of information against accidental or malicious attacks. We are following developments in the use of crptographic techniques and hashing to test authenticity, and will adopt such techniques as they appear to be effective. The difficult part of ensuring authenticity may prove to be, not the testing of authenticity when it is questioned, but rather the mechanism that questions authenticity in the first place. Eventually, some such mechanisms will probably be embedded at a low level in the computing and commmunication systems that we use to manipulate journal articles. For the foreseeable future, the three offline backups will provide a reliable way of testing authenticity. The only effective way to avoid proliferation of inauthentic versions of texts (which would be passed around completely outside of the control of the publisher), is to encourage readers to use reliable sources, such as the three official servers, and library-maintained servers that mirror them conscientiously, by making those reliable sources as accessible as possible.