# Author's Guide for Electronic Submittal of *JACM* Journal Articles*

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## Contents



## Overview

This document explains how to prepare an ACM article using the `acmart` document class and the `acmtrans` BibTeX style and how to submit the manuscript

*This document is based on the ACM's "Author's Guide for Electronic Submittal of ACM Journal Articles Accepted for Publication" and is meant to be used as an interim document until the ACM releases the final version of its own macros.

electronically. Section 1 explains how to obtain the macros for preparing your manuscript. Section 2 describes how to mark specific structural elements in articles. Section 3 provides instructions for electronic submission.

Manuscripts submitted electronically to the ACM will *not* be used as camera-ready copy. Instead, your LaTeX code will be converted into SGML. In order to facilitate the conversion to SGML, please stick as close as possible to the structural markup described in this guide. This also means that you don't have to spend time fine-tuning the line or page breaks of your document, since your manuscript will be re-typeset using a different typesetting system.

The markup has been kept as compatible as possible with the standard LaTeX `article` markup; with the exception of in-text citations, most of the changes you will need to make are limited to the preamble and frontmatter of your document and should only take a few minutes. Except where noted in this document, you should use the standard markup as described in *LaTeX: A Document Preparation System* [2]. You may also find *The LaTeX Companion* [1] a useful reference.

# 1 Marking Structural Elements in Articles

## 1.1 Why Mark Article Structure?

By identifying structural elements in your text, you enable ACM to use an automated system that streamlines handling of your manuscript through editing and production once it is accepted for publication. The ACM publishing system converts your basic markup to Standard Generalized Markup Language (SGML) tags. The SGML tags let the electronic publishing system recognize information types within the article to facilitate storage, retrieval, and tracking.

SGML documents are system-independent and are readily exchanged among users of various computer platforms and applications.

## 1.2 Obtaining the `acmart` Macros

You can retrieve copies of the `acmart` macros from the following WWW page:

`http://theory.lcs.mit.edu/~jacm/acmart/`

Versions are available for both LaTeX 2.09 and LaTeX $2_\varepsilon$, so please be sure to retrieve the appropriate version for your system. The macros are also available via anonymous ftp at

`ftp://theory.lcs.mit.edu/pub/jacm/acmart/`

# 2 Marking the Article

This section provides specific information you need to prepare your article for automated conversion.

## 2.1 Specifying the Document Style and Options

In addition to the other features described below, the `acmart` class has two new document class options to make it easier to produce different forms of the manuscript tailored for different uses.

**faircopy** The `faircopy` option reformats the printed manuscript into a form more suitable for processing by ACM. For example, it automatically puts all figures on pages by themselves, with labels at the bottom of the page identifying the figure (see the section on “Printed materials” on page 12).

**preprint** The `preprint` option, which is the default, produces a manuscript suitable for distribution as a preprint.

To produce a preprint version of your manuscript, just replace your normal document style by the `acmart` class, e.g.,

`\documentclass[`⟨options⟩`]{acmart}`

When printing your final manuscript to send to ACM for publication, add the `faircopy` option:

`\documentclass[`⟨options⟩`,faircopy]{acmart}`

If you are using the LaTeX 2.09 version of `acmart`, substitute `\documentstyle` for `\documentclass` in the above examples.

## 2.2 Front Matter

The front matter consists of the following items:

- the title
- the names and addresses of the authors
- the abstract
- a list of ACM Computing Classification System categories
- a list of General Terms
- a list of keywords
- a copyright notice and other information to appear at the bottom of the title page of the article

The markup of these items is described in detail below. The front matter is ended by the `\maketitle` command, which must occur after all of the items listed below, and before the first text of your paper. This section also describes the `sponsor` environment, which, if present, should be put immediately after the `\maketitle` command.

### The title

The title is marked using the `\title` macro, as usual:

```
\title{Put the title of the paper here}
```

### The authors

Group the name and affiliation for each author as a component of the `\author` command. Even if an affiliation is the same for multiple authors, repeat the information:

```
\author{Author 1 name\\
affiliation
\and
Author 2 name\\
affiliation}
```

**Required Information:**

- Street number/name or P.O. Box
- City, state, postal code (e.g., zip code)
- Country
- Telephone number (with area code)

**Optional Information:**

- Fax number (with area code)
- E-mail address

**Note:** Phone and fax numbers do not appear in printed articles; they are for ACM's use in communicating with authors.

### The abstract

The abstract should be marked using the `abstract` environment:

```
\begin{abstract}
type text here, marking paragraphs as usual
\end{abstract}
```

**Note** In the standard LaTeX classes, abstracts are placed *after* the `\maketitle` command, but in the `acmart` class, the abstract must be placed *before* the `\maketitle` command. Failure to do so will result in a warning message and a misplaced abstract.

### The ACM categories

Each paper should have one or more categories, taken from the current version of the ACM Computing Classification System.[1] The categories are marked using the `\category` macro, which takes the following form:

`\category{`$\langle code \rangle$`}{`$\langle category \rangle$`}{`$\langle subcategory \rangle$`}[`$\langle subject\ descriptor(s) \rangle$`]`

Note that the subject descriptors are optional.

If there are multiple categories, they should each be marked with a separate `\category` tag:

```
\category{D.3.3}{Programming Languages}{Language Constructs
and Features}

\category{A.0}{General}{}[Biographies/Autobiographies]
```

If there are multiple subject descriptors under a given category, separate them with the `\and` command:

```
\category{I.7.2}{Text Processing}{Document Preparation}[Languages
\and Photocomposition]
```

### The General Terms

The General Terms are taken from a defined set of words published along with the ACM Classification System. They are marked using the `\terms` macro:

`\terms{`$\langle term_1 \rangle$, $\langle term_2 \rangle$, $\langle term_3 \rangle$, ...`}`

### The keywords

Authors are also encouraged to supply one or more keywords. These should be marked using the `\keywords` macro:

`\keywords{`$\langle keyword_1 \rangle$, $\langle keyword_2 \rangle$, $\langle keyword_3 \rangle$, ...`}`

### The copyright notice and other information

The ACM copyright policy allows distribution for personal or classrom use provided that the ACM copyright is displayed on the first page of the article, along with a full citation to the published version.[2] The copyright notice can be produced using the `bottomstuff` environment, which should be put before the `\maketitle` command. The notice itself is produced by the `\permission` command; the author must specify the year and holder of the copyright. A typical notice would look like this:

[1] The full Classification System is available on the *JACM* WWW page.

[2] We recommend that all authors familiarize themselves with the new ACM copyright policy. Information concerning the new policy is available on the ACM Publications page: `http://www.acm.org/pubs/`.

```
\begin{bottomstuff}

\permission
\copyright\ 1995 by the Association for Computing Machinery,
Inc.

\end{bottomstuff}
```

Other information, such as acknowledgements of research support or information about the prior publication of preliminary versions of the paper, which would typically be put inside a `\thanks` command in the standard LaTeX classes, can also be put in the `bottomstuff` environment. If present, such information should come before the copyright notice.

The full citation to the published paper can be put in using the `\firstfoot` command, as follows:

```
\firstfoot{Journal of the Association for Computing
Machinery, Vol. 38, No. 2, April 1991, pp. 100-113}
```

We recommend that you include such a citation on any preprints that you distribute.

#### Sponsor

The `sponsor` environment can be used to indicate supporting sponsors of conferences, presentations, etc. If present, it should go right after the `\maketitle` command:

```
\begin{sponsor}{sponsor name}
{Number and street\\
city, state, zip\\
country}
\end{sponsor}
```

### 2.3 Proclamations and Proofs

The standard LaTeX classes recognize a single class of proclamations, namely, theorem-like proclamations, declared using the `\newtheorem` command. The `acmart` class recognizes a second class of proclamations, the "definition-style" proclamations, declared using the `\newdef` command, which has the same syntax as `\newtheorem`.

Lists of typical theorem- and definition-style proclamations appear below. If you need one that is not in these lists, use your best judgement, but include a note to the ACM explaining your choice.

#### Theorem-style proclamations

Use the `\newtheorem` command for the following mathematical structures:

| | | |
|---|---|---|
| Algorithm | Assertion | Criterion |
| Reduction | Axiom | Hypothesis |
| Sublemma | Conjecture | Lemma |
| Theorem | Corollary | Proposition |

For example, to declare an environment called `alg` to be used for algorithms, you would put the following in the preamble of your document:

```
\newtheorem{alg}{Algorithm}
```

In the body of the manuscript, individual algorithms would then be marked up as follows:

```
\begin{alg}
text of algorithm here
\end{alg}
```

Note that you do not have to type the word "Algorithm" at the beginning of the algorithm; it will be added automatically.

### Definition-style proclamations

Use the `\newdef` command for the following structures:

| | | |
|---|---|---|
| Affirmation | Answer | Definition |
| Property | Application | Discussion |
| Question | Assumption | Example |
| Remark | Case | Exercise |
| Subcase | Claim | Fact |
| Step | Comment | Notation |
| Technique | Conclusion | Note |
| Type | Condition | Observation |
| Convention | Problem | |

For example, to declare an environment called `aff` to be used in marking affirmations, you would put the following in your preamble:

```
\newdef{aff}{Affirmation}
```

and mark individual affirmations as follows:

```
\begin{aff}
text of affirmation
\end{aff}
```

### Proofs

In addition to the proclamations described above, the `amcart` style also has a proof environment, for example:

```
\begin{theorem}
Text of theorem.
\end{theorem}

\begin{proof}
Proof of theorem.
\end{proof}
```

### 2.4 Figures

Figures should be marked using the `figure` environment, as normal. However, to make it easier to meet some of ACM's requirements, two new macros have been provided for use within the `figure` environment:

- `\nocaption`: This is used in place of the `\caption` command for any figures that don't have a caption. It produces only a figure number. Every figure and table should have either a `\caption` or a `\nocaption` command.

- `\figfilename`: When producing final copy to send to ACM for publication, the ACM requests that you mark all figures with the name of the file containing the figure (see section 3). This can be done by putting a `\figfilename` command inside the `figure` environment, for example:

  ```
  \begin{figure}
  \figfilename{smith1.tex}

  <body of figure>

  \end{figure}
  ```

### 2.5 In-text Citations

ACM articles use the so-called "author-year" citation style, where items are referenced by their author(s) and year of publication. For example, our citation of the LaTeX manual would be formatted as "[Lamport 1994]" rather than "[2]". Thus, in the `acmart` document class, the `\cite` macro has been redefined to produce the former rather than the latter style of in-text citation. You should therefore be careful to check all of your in-text citations and make sure that they still read properly with the new citation format.

Note that this citation format requires the use of the `acmtrans` bibliography style to work properly. If you do not use `acmtrans`, the `\cite` command (and the variants discussed below) will not work properly.

In order to provide greater flexibility and promote a more fluid writing style, a number of additional `\cite`-like macros are also available to produce other useful forms of citations. All of these variants are listed below and have the same syntax as the standard LaTeX `\cite` command, with one enhancement: each command also has a $*$-variant that suppresses the brackets that would normally be produced. Thus, if `\cite` would produce "[Jones 1995]", then `\cite*` would produce simply "Jones 1995".[3]

`\cite` produces citations with full author list and year, e.g., "[Brown 1978; Jarke, Turner, Stohl, et al. 1985]"

`\citeA` produces citations with only the full author list, e.g., "[Brown; Jarke, Turner and Stohl]"

`\shortcite` produces citations with an abbreviated author list and year, e.g., "[Brown 1978; Jarke et al., 1985]"

`\shortciteA` produces only the abbreviated author list.

`\citeyear` produces the year information only, within brackets.

`\citeN` produces citations with the full author list and year, but that can be used as nouns in a sentence; brackets appear only around the year, not around the author names, e.g., "Shneiderman [1978] states that...". If given multiple citekeys, the items referred to should all have the same author; otherwise, an error is signaled. For `\citeN`, the ∗-form is identical to the regular form.

`\shortciteN` is a variant of `\citeN` that uses an abbreviated author list.

## 2.6 Back Matter

The back matter consists of the following parts:

- the appendices (if any)
- the acknowledgements (if any)
- the references

If present, the parts should appear in the order listed.

### Appendices

If there is a single appendix, mark it with the `\section*` command, as follows:

`\section*{`Title of appendix`}`

If there are multiple appendices, mark the beginning of the appendices with the `\appendix` command, and then mark the individual appendices with the `\section` command. For example,

[3]For compatibility with older versions of `acmtrans`, the ∗-variants are also available as "NP-variants", e.g., `\citeNP` instead of `\cite*`, etc. However, the ∗-forms are preferred, and the NP-forms may be removed in a future release.

```
\appendix

\section{First appendix}

Text of first appendix.

\section{Second appendix}

Text of second appendix.
```

**Acknowledgements**

A section of acknowledgements may follow the text of the document, and should be marked using the `acks` environment, as follows:

```
\begin{acks}
Text of acknowledgements goes here.
\end{acks}
```

Note that it is not necessary to put in a section header; that will be supplied automatically.

**References**

We recommend that you use BibTeX to produce your bibliography. If you do, use the `acmtrans` bibliography style (see section 1 for instructions on obtaining this file), and be sure to include the `.bbl` file produced by BibTeX with the material that you send to the ACM.

If you do not use BibTeX, you must arrange the bibliographic entries alphabetically according to author's or editor's names (or the publishing organization for items to which no names can be attached). Within each item, arrange the bibliographic information so that each component appears on a new line, as follows:

**Journal articles:**

Author 1 name
Author 2 name
Title of article
Journal title, volume, number
Date, pages

**Books:**

Author 1 name
Author 2 name
Title of book section
Book title

Editor name
Publisher, city, year
Chapter and/or pages

**Report or proceedings:**

Author 1 name
Author 2 name
Report title, report number
Conference or publisher
Date, pages

# 3 Submitting an Article Electronically

## 3.1 What to Provide

After your article is accepted for publication, you can submit it for publication in electronic form. An electronic submittal must include the following items:

**Electronic materials**

1. A text file containing the complete article that incorporates all revisions requested by the journal editor. The text requires structural markup to facilitate conversion; see sections 1 and 2 of this document for instructions.
   - Submit two copies of the text file.
   - Name each file with the first seven letters of the contact author's surname, the copy number (1 or 2), and an extension indicating the file format (LaTeX)

     Examples: `smith1.tex` `anderso2.tex`

2. A graphics file for each figure. You can embed graphics in the text file, but you must provide the graphics files on a separate diskette.
   - Name the graphics files with the first 6 characters of the contact author's surname, the figure number (one or two digits), and an extension indicating the file format:

     Examples: `smith5.eps` `smith11.ps` `anders3.tex`

3. An ASCII text file (named `readme.1st`) containing:
   - (Required) Names of all files submitted with descriptions of their contents
   - (Optional) Information for ACM production staff (for example, an explanation of all the format for an extensive displayed equation or an example of program code; names of the graphics software used to create figures; or notes on your markup of the text)

**Printed materials**

1. A hard copy of your paper that exactly corresponds to the content of the submitted text file.
2. A high-quality, high-resolution, full-page ($8.5 \times 11$) hard copy of each figure (for scanning, if necessary). Each figure should appear on a page by itself, and at the bottom of the page, outside the image area, you should label the graphic with the figure number and the file name for the electronic version. (See section 2.4).
3. A completed ACM copyright form. The copyright form is available online at

   `http://acm.org/pubs/copyright_form.html`

**Note:** Your submittal is not complete without the printed copies of the text and graphics for your article.

## 3.2 How to Prepare Your Text and Graphics

**Guidelines for text**

Remember that your LaTeX code will be used for input processing, not to produce camera-ready copy. Avoid fine-tuning spacing between lines, paragraphs, displayed equations, or other elements.

**Guidelines for graphics**

To ensure accurate, high-quality production of your graphics, prepare and submit them as follows.

**Types of Graphics** Illustrations used in ACM journal articles can include charts, graphs, line drawings, photographs, and screen captures.

**Size** Maximum height of image: 6.5 inches; maximum width of image: 5 inches.

**Photographs** Send prints from negatives or high-resolution printed copy of scanned photos. Do not screen photographs; ACM handles all prepress operations.

**File formats**

Submit graphics in one of these file formats:

| Type | Format |
|---|---|
| Black-and-white line art | Tagged Image File Format: 1-bit TIFF 5.0 (`.tif`) |
| Grayscale and color art | Encapsulated Postscript: 1.2 or 2.0 (`.eps`) |

**Position in text** Provide a figure number, a caption (if appropriate), and the file name for each figure within the text at the first reference to the figure.

**Inline graphics** For graphics (such as special characters and symbols) that appear within a line of text, embed the graphic in the text file. If the graphic must be in a separate file, name the file to indicate its contents. Make sure that the text clearly indicates where the graphic should appear.

**Compression** Compress files only if necessary, for example, when a file is too large to fit on a single diskette. Use one of the following compression programs:

- pkzip
- Stuffit

**General** For all types of graphics.

- Boxes: Do not surround the image with a border or box.
- Fonts: For text within a graphic, use common fonts such as Helvetica, Univers, Times, Century Schoolbook, or Symbol (Adobe Type 1 or True-Type equivalents).

### 3.3 How to Submit Your Article

Submit all materials to the Editor-in-Chief of the journal in which your article will appear. Mail the printed materials and the files (on electronic media) to the Editor-in-Chief in one package.

For the *Journal of the ACM*, you may also submit all materials electronically. Instructions for electronic submission are available on the *JACM* WWW page:

`http://theory.lcs.mit.edu/~jacm/electronic.html`

**Note:** Submitted materials are not returned to the authors.

**Diskette** Use one or more diskettes formatted with Microsoft MS-DOS or IBM PC-DOS. High-density 3.5-inch diskettes are preferred, but 5.25-inch double- or high-density diskettes are acceptable. Mail diskettes in a sturdy container to prevent damage.

Label each diskette with the following information:

- Author name

- Diskette number (1 of 1, 2 of 3, etc.)
- Author telephone number
- Journal name and article title
- File type(s) (text or graphics) and format(s)

### 3.4 Getting Help

If you have any questions, send e-mail to `jacm@theory.lcs.mit.edu`.

## References


[1] Michel Goossens, Frank Mittelbach, and Alexander Samarin. *The LaTeX Companion*. Addison-Wesley, Reading, Massachusetts, 1993.

[2] Leslie Lamport. *LaTeX: A Document Preparation System*. Addison-Wesley Publishing Company, second edition, 1994.