`acmtog` Author Submission Guide: Setting Up Your LaTeX 2ε Files

This is a guide for authors who are preparing papers for Association for Computing Machinery Press using the LaTeX document preparation system and the `acmtog` class file.

1. INTRODUCTION

The LaTeX document preparation system is a special version of the TeX typesetting program where-in a collection of TeX commands are added to LaTeX to simplify typesetting. Importantly, it allows the author to concentrate on the logical structure of the document rather than its visual layout.

Moreover, LaTeX provides a consistent and comprehensive document preparation interface. There are simple-to-use commands for generating a table of contents, lists of figures and/or tables, and indexes. LaTeX can automatically number list entries, equations, figures, tables, and footnotes, as well as articles, sections, and subsections. Using this numbering system, bibliographic citations, page references, and cross references to any other numbered entity (e.g. article, section, equation, figure, list entry, etc.) become quite simple and straightforward. The use of LaTeX document classes allows a simple change of class to transform the appearance of your document.

LaTeX is a powerful tool for managing long and complex documents. In particular, partial processing enables long documents to be produced article by article without losing sequential information. The use of document classes allows a simple change of style (or style option) to transform the appearance of your document.

2. THE ACMTOG DOCUMENT CLASS

The `acmtog` class file preserves the standard LaTeX interface such that any document that can be produced using the standard LaTeX `article` class can also be produced with the `acmtog` class file.

It is likely that the make up will change after file submission. For this reason, we ask you to ignore details such as slightly long lines, page stretching, or figures falling out of synchronization, as these details can be dealt with at a later stage.

Use should be made of symbolic references (`\ref`) in order to protect against late changes of order, etc.

3. USING THE ACMTOG CLASS FILE

If the file `acmtog.cls` is not already in the appropriate system directory for LaTeX files, either arrange for it to be put there or copy it to your working directory. The `acmtog` document class is implemented as a complete class, *not* a document style option. In order to use the `acmtog` document class, replace `article` by `acmtog` in the `\documentclass` command at the beginning of your document:

```
\documentclass{article}
```

replace by

```
\documentclass{acmtog}
```

In general, the following standard document style options should *not* be used with the `acmtog` class file:

(1) `10pt`, `11pt`, `12pt` – unavailable;
(2) `twoside` (no associated style file) – `twoside` is the default;
(3) `fleqn`, `leqno`, `titlepage` – should not be used;

3.1 Additional Document Style Options

The following additional style option is available with the `acmtog` class file:

`manuscript` – this will double-space your article by setting `\baselinestretch` to 2.

Please place any additional command definitions at the very start of the LaTeX file, before the `\begin{document}`. For example, user-defined `\def` and `\newcommand` commands that define macros for technical expressions should be placed here. Other author-defined macros should be kept to a mininum.

Commands that differ from the standard LaTeX interface, or that are provided in addition to the standard interface, are explained in this guide. This guide is not a substitute for the LaTeX manual itself. Authors planning to submit their papers in LaTeX are advised to use `acmtog.cls` as early as possible in the creation of their files.

4. ADDITIONAL FACILITIES

In addition to all the standard LaTeX design elements, the `acmtog` class file includes the following features:

(1) Use of the `\acmArticleNum{...}` command for article number.
(2) Use of the `\acmMonth{...}` `\acmYear{...}` command for month and year of the paper.
(3) Use of the `\acmVolume{...}` `\acmNumber{...}` commands for volume and issue number of the paper.
(4) Use of the `\acmdoi{...}` command for doi of the paper.
(5) Use of the `\received{...}{...}` commands for history of the paper.

In general, once you have used the additional `acmtog.cls` facilities in your document, do not process it with a standard LaTeX class file.

4.1 Titles, Author's Name, and Affiliation

The title of the article, author's name, and affiliation (where the *bulk* of the research was done) are used at the beginning of the article (for the main title). These can be produced using the following code:

```
\title{This is an example of article title}

\author{Author Name
\affil{Author's Affiliation}
\and
```

```
Author Name
\affil{Author's Affiliation}}
```

Note: The affiliation, that you provide in your article, should be for the *institution* where the *bulk* of the research was accomplished. If the author has gone on to a new institution, before publication, the affiliation should **not** be changed in the article. The author's *current* address may be provided in the 'Author's addresses:' section (just before the Permission statement).

```
\markboth{Author Name}{Article Title}
\maketitle
```

4.2 Running Headline

The title is used as running headline at the top of every odd-numbered page. The author's name is used as running headline at the top of every even-numbered page.

The \pagestyle and \thispagestyle commands should not be used. Similarly, the command \markright is not necessary. The running headlines can be produced using the following code:

```
\markboth{Author Name}{Article Title}
```

4.3 Abstracts, Key words, category, term etc...

At the beginning of your article, the title should be generated in the usual way using the \maketitle command. The sponsorship, copyright, and author address should be enclosed within bottomstuff environment, followed immediately by the category, term, keywords, and acmformat enclosed in \category,\terms, \keywords,\acmformat commands. The abstract should be enclosed within an abstract environment, All these environment can be produced using the following code:

```
\category{I.3.7}{...}{...}[Animation]
\category{I.3.5}{...}{...}[Physically based modeling]

\terms{Experimentation, Human Factors}

\keywords{Face animation, image-based modelling...}
```

4.4 (New) ACM Reference Format

The \acmformat environment formats the information provided in the *ACM Reference Format*.

```
\acmformat{Vitor F. Pamplona, Manuel M. Oliveira,
Gladimir V. G. Baranoski, and Sean Fogarty. YYYY.
Photorealistic models for pupil light reflex
and iridal pattern deformation.
{\em ACM Trans. Graph.} xx, x, Article xxx
(Month YYYY), nn pages.\\
\doiline}
```

At a minimum you need to supply the author names, year and a title. **Note:** Full first names whenever they are known, surname last, followed by a period. In the case of two authors, 'and' is placed between them. In the case of three or more authors, the serial comma is used, that is, all author names except the last one but including the penultimate author's name are followed by a comma, and then 'and' is placed before the final author's name. If only first and middle initials are known, then each initial is followed by a period and they are separated by a space.

The remaining information (volume, issue, article number, month, year, pages etc.) will be filled in during the production process.

```
\begin{bottomstuff}
Manuel M. Oliveira acknowledges a CNPq-Brazil
fellowship (305613/2007-3). Gladimir V. G. Baranoski
acknowledges a NSERC-Canada grant (238337).
Microsoft Brazil provided additional support.
Authors' addresses: land and/or email addresses.
Author name, (Current address)....
\end{bottomstuff}
```

Note: If you have changed institutions then put the name of the affiliation, where you did the *bulk* of the work, as the affiliation beneath your name in the *title block*. Put your *current address* after 'Authors' addresses:'.

```
\begin{abstract}
We introduce a physiologically-based model for
pupil light reflex (PLR) and an image-based model
for iridal pattern deformation. Our PLR model
expresses the pupil diameter as a function of
the lighting of the environment, and is described
by a delay-differential equation, naturally
adapting the pupil diameter even to abrupt
changes in light conditions...
\end{abstract}
```

5. SOME GUIDELINES FOR USING STANDARD FACILITIES

The following notes may help you achieve the best effects with the acmtog class file.

5.1 Sections

LATEX 2ε provides four levels of section headings and they are all defined in the acmtog class file:

—\section

—\subsection

—\subsubsection

—\paragraph

Section headings are automatically converted to allcaps style.

5.2 Lists

The acmtog class file provides unnumbered lists using the unnumlist environment for example,

First unnumbered item which has no label and is indented from the left margin.

Second unnumbered item.

Third unnumbered item

The unnumbered list which has no label and is indented from the left margin. was produced by:

```
\begin{unnumlist}
  \item First unnumbered item...
  \item Second unnumbered item...
  \item Third unnumbered item...
\end{unnumlist}
```

The acmtog class file also provides hyphen list using the itemize environment for example,

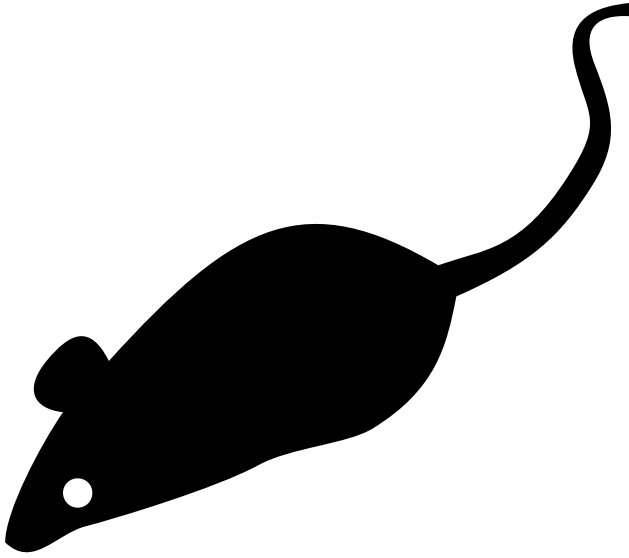—First unnumbered bulleted item which has no label and is indented from the left margin.

Table I. Tuning Set and Testing Set

Label	Description	Number of Users	Number of Queries
Train70	Training Data	70	104
Test70	Testing Data I		105
Test30	Testing Data II	30	119
	Total	100	328

```
\begin{figure}
\centerline{\includegraphics[width=20pc]{mouse.eps}}
\caption{An example of the testing process for a
binary tree. The globa null hypothesis is tested
first at level $\alpha$ (a), and the level of
individual variables is reached last (d). Note
that individual hypotheses can be tested at
level $\alpha/4$ and not $\alpha/8$ as one might
expect at first.}
\label{sample-figure}
\end{figure}
```

Figures can be resized using first and second argument of `\includegraphics` command. First argument is used for modifying figure height and the second argument is used for modifying figure width respectively.

Cross-referencing of figures, tables, and numbered, displayed equations using the `\label` and `\ref` commands is encouraged. For example, in referencing Figure 1 above, we used `Figure~\ref{sample-figure}`

5.4 Tables

The `acmtog` class file will cope with most of the positioning of your tables and you should not normally use the optional positional qualifiers on the `table` environment which would override these decisions. Table captions should be at the top.

```
\begin{table}
\tbl{Tuning Set and Testing Set}{
\begin{tabular}{|l|l|c|c|}\hline
Label &       \multicolumn{1}{c|}{Description}
&    Number of Users &
     Number of Queries\\\hline
Train70 &    Training Data &
\smash{\raise-7pt\hbox{70}} &    104\\
\cline{1-2}\cline{4-4}
Test70 &     Testing  Data I &    &  105\\\hline
Test30 &     Testing  Data II  &    30 &     119\\\hline
 &       Total &     100  & 328\\\hline
\end{tabular}}
\end{table}
```

5.5 Landscaping Pages

If a table is too wide to fit the standard measure, it may be turned, with its caption, to 90 degrees. Landscape tables cannot be produced directly using the acmtog class file because TEX itself cannot turn the page, and not all device drivers provide such a facility. The following procedure can be used to produce such pages.

Use the package `rotating` in your document and change the coding from
`\begin{table}...\end{table}`
        to
`\begin{sidewaystable}...\end{sidewaystable}`

and for figures

Fig. 1. An example of the testing process for a binary tree. The global null hypothesis is tested first at level α (a), and the level of individual variables is reached last (d). Note that individual hypotheses can be tested at level $\alpha/4$ and not $\alpha/8$ as one might expect at first.

—Second unnumbered bulleted item.

—Third unnumbered bulleted item which has no label and is indented from the left margin.

was produced by:

```
\begin{itemize}
  \item First item...
  \item Second item...
  \item Third item...
\end{itemize}
```

Numbered list is also provided in `acmtog` class file using the `enumerate` environment for example,

(1) The attenuated and diluted stellar radiation.

(2) Scattered radiation, and

(3) Reradiation from other grains.

was produced by:

```
\begin{enumerate}
  \item The attenuated...
  \item Scattered radiation, and...
  \item Reradiation from other grains...
\end{enumerate}
```

5.3 Illustrations (or figures)

The `acmtog` class file will cope with most of the positioning of your illustrations and you should not normally use the optional positional qualifiers on the `figure` environment that would override these decisions.

Figure captions should be *below* the figure itself, therefore the `\caption` command should appear after the figure or space left for an illustration. For example, Figure 1 is produced using the following commands:

```
\begin{figure}...\end{figure}
                    to
\begin{sidewaysfigure}...\end{sidewaysfigure}
```

environments in your document to turn your table on the appropriate page of your document. For instance, the following code prints a page with the running head, a message half way down and the table number towards the bottom.

```
\begin{sidewaystable}
\tbl{Landscape table caption to go here.}{...}
\label{landtab}
\end{sidewaystable}
```

5.6 Double Column Figure and Tables

For generating the output of figures and tables in double column we can use the following coding:

(1) For Figures:

```
\begin{figure*}...\end{figure*}
```

(2) For landscape figures:

```
\begin{sidewaysfigure*}...\end{sidewaysfigure*}
```

(3) For Tables:

```
\begin{table*}...\end{table*}
```

(4) For landscape tables:

```
\begin{sidewaystable*}...\end{sidewaystable*}
```

5.7 Typesetting Mathematics

The `acmtog` class file will set displayed mathematics with center to the column width, provided that you use the LaTeX 2$_\varepsilon$ standard of open and closed square brackets as delimiters.
The equation

$$\sum_{i=1}^{p} \lambda_i = (S)$$

was typeset using the `acmtog` class file with the commands

```
\[
  \sum_{i=1}^p \lambda_i = (S)
\]
```

For display equations, cross-referencing is encouraged. For example,

```
\begin{equation}
  (n-1)^{-1} \sum^n_{i=1} (X_i - \overline{X})^2.
  \label{eq:samplevar}
\end{equation}
Equation~(\ref{eq:samplevar}) gives the formula for
sample variance.
```

The following output is generated with the above coding:

$$(n-1)^{-1} \sum_{i=1}^{n} (X_i - \overline{X})^2. \tag{1}$$

Equation (1) gives the formula for sample variance.

5.8 Enunciations

The `acmtog` class file generates the enunciations with the help of the following commands:

```
\begin{theorem}...\end{theorem}
\begin{strategy}...\end{strategy}
\begin{property}...\end{property}
\begin{proposition}...\end{proposition}
\begin{lemma}...\end{lemma}
\begin{example}...\end{example}
\begin{proof}...\end{proof}
\begin{definition}...\end{definition}
\begin{algorithm}...\end{algorithm}
\begin{remark}...\end{remark}
```

The above-mentioned coding can also include optional arguments such as
`\begin{theorem}[...]`. Example for theorem:

```
\begin{theorem}[Generalized Poincar\'{e} Conjecture]
Four score and seven ... created equal.
\end{theorem}
```

THEOREM 1 GENERALIZED POINCARÉ CONJECTURE. *Four score and seven years ago our fathers brought forth, upon this continent, a new nation, conceived in Liberty, and dedicated to the proposition that all men are created equal.*

5.9 Extract

Extract environment should be coded within
    `\begin{extract}..\end{extract}`

5.10 Acknowledgments

Acknowledgments environment should be coded within
    `\begin{acks}..\end{acks}`

5.11 References

References are most easily (and correctly) generated using BIBTEX, which is easily invoked via

```
% New style as of March 2012
\bibliographystyle{ACM-Reference-Format-Journals}
\bibliography{acmtog-sample-bibfile}
```

When submitting the document source (.tex) file to external parties, it is strongly recommended that the BIBTEX .bbl file be manually copied into the document (within the traditional LaTeX bibliography environment) so as not to depend on external files to generate the bibliography and to prevent the possibility of changes occurring therein.

6. TYPICAL REFERENCES IN NEW ACM REFERENCE FORMAT

A paginated journal article [Abril and Plant 2007], an enumerated journal article [Cohen et al. 2007], a reference to an entire issue [Cohen 1996], a monograph (whole book) [Kosiur 2001], a monograph/whole book in a series (see 2a in spec. document) [Harel 1979], a divisible-book such as an anthology or compilation [Editor 2007] followed by the same example, however we only output the series if the volume number is given [Editor 2008] (so Editor00a's series should NOT be present since it has no vol. no.), a chapter in a divisible book [Spector 1990], a chapter in a divisible book

Table II. Tuning Set and Testing Set

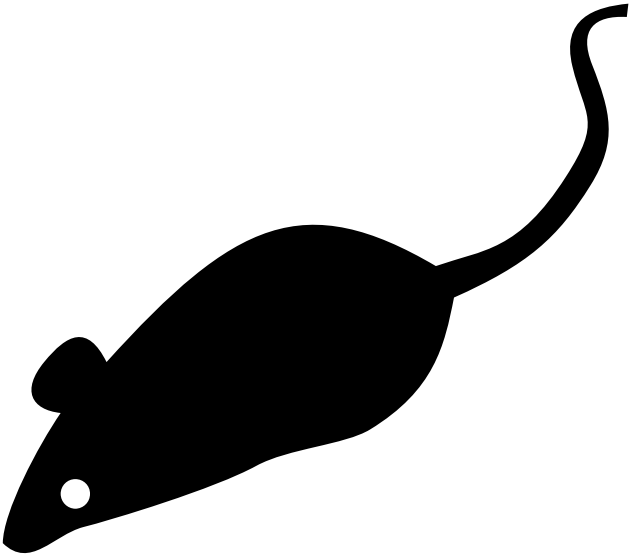| Label	Description	Number of Users	Number of Queries
Train70	Training Data		104
Test70	Testing Data I	70	105
Test30	Testing Data II	30	119
	Total	100	328

Fig. 2. An example of the testing process for a binary tree. The global null hypothesis is tested first at level α (a), and the level of individual variables is reached last (d). Note that individual hypotheses can be tested at level $\alpha/4$ and not $\alpha/8$ as one might expect at first.

in a series [Douglass et al. 1998], a multi-volume work as book [Knuth 1997], an article in a proceedings (of a conference, symposium, workshop for example) (paginated proceedings article) [Andler 1979], a proceedings article with all possible elements [Smith 2010], an example of an enumerated proceedings article [Gundy et al. 2007], an informally published work [Harel 1978], a doctoral dissertation [Clarkson 1985], a master's thesis: [Anisi 2003], an online document / world wide web resource [Thornburg 2001], [Ablamowicz and Fauser 2007], [Poker-Edge.Com 2006], a video game (Case 1) [Obama 2008] and (Case 2) [Novak 2003] and [Lee 2005] and (Case 3) a patent [Scientist 2009], work accepted for publication [Rous 2008], 'YYYYb'-test for prolific author [Saeedi et al. 2010a] and [Saeedi et al. 2010b]. Other cites might contain 'duplicate' DOI and URLs (some SIAM articles) [Kirschmer and Voight 2010]. Boris / Barbara Beeton: multi-volume works as books [Hörmander 1985b] and [Hörmander 1985a].

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Bruce P. Douglass, David Harel, and Mark B. Trakhtenbrot. 1998. Statecarts in use: structured analysis and object-orientation. In *Lectures on Embedded Systems*, Grzegorz Rozenberg and Frits W. Vaandrager (Eds.). Lecture Notes in Computer Science, Vol. 1494. Springer-Verlag, London, 368–394. DOI:http://dx.doi.org/10.1007/3-540-65193-4_29

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Ian Editor (Ed.). 2008. *The title of book two* (2nd. ed.). University of Chicago Press, Chicago, Chapter 100. DOI:http://dx.doi.org/10.1007/3-540-09237-4

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