Quick and Dirty Instructions for the New ACM Typesetting Format—\texttt{acmart} Class*

Rasit Eskicioglu

"Retired" Publication Chair
for \texttt{SENSYS} and \texttt{BUILDSYS} and affiliated Workshops

September 2018

Preamble

Since April 2017, ACM has adopted a unified format (\texttt{acmart.cls}) for its publications. The newcomers to the communities should have no problem using it, as it will be just the right template to use. This new format has several important changes that might confuse particularly seasoned members of the \texttt{SENSYS} and \texttt{BUILDSYS} communities and of their affiliated workshops, who have been accustomed to the old (slightly modified) \texttt{sig-alternate.cls} style.

One such change is that all ACM conference proceedings are now using 9pt fonts for the main text. This new style uses several packages and free fonts (\texttt{Linbiolinum} and \texttt{LibLiberte}), which are available in all major \TeX{} distributions (\TeX{}Live, \texttt{MiKTeX}, \texttt{Mac\TeX{}}) 2015 and later. If you have older distributions, your documents will not have proper fonts.

Important Rules

1. The preferred format is \LaTeX{}. If you are not an avid \LaTeX{} user, you can use the new Word format, but make sure to read the User Guide\textsuperscript{(1)} carefully, and install the new \texttt{Linbiolinum} and \texttt{LinLiberte} fonts that comes with the package.
2. Read the User Guide\textsuperscript{(1)}. Read it again, especially if you were using the old style.
3. Do not change anything in the \texttt{acmart.cls} file.
4. Do not change any length, such as \texttt{\textlength}, \texttt{\textheight}, or any margin in the body of your paper.
5. Look at the \texttt{sample-sigconf.tex} and create your own with all the relevant information and \textit{include the body of your manuscript} at the end.
6. The \texttt{ACM-Reference-format} block provides proper and full citation information of your manuscript (if published) and it is \textbf{required} for all manuscripts (regular or short papers, as well as demo and poster abstracts). \textbf{Do not} set \texttt{printacmref} to \texttt{false} to disable it to save space, because you will be asked to include it for your \textbf{Camera Ready} manuscript.
7. ACM now uses \textbf{CCS Categories} (replacing \textbf{Terms}) block in all publications. This block, as well as Keywords are required for all short or regular papers (not needed for demo or poster abstracts). Please provide proper content for them (see the User Guide for details).

Top Matter

The details are on pages 8–9 of the User Guide\textsuperscript{(1)}, but please note that ACM discourages the use of “merged” authors block, such as shown below:

\footnote{Please note that the examples and some content in this document reflect the recent \texttt{SENSYS} 2018 and \texttt{SENSYS} and \texttt{BUILDSYS} communities, the suggestions are also applicable to the ACM editions (odd years) of the CPS-IoT Week Conferences, particularly the ISPN.}
Instead, use a separate \affiliation for each author to generate the following:

<table>
<thead>
<tr>
<th>Ben Trovato</th>
<th>G.K.M. Tobin</th>
<th>Lars Thørväld</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institute for Clarity in Documentation, P.O. Box 1212, Dublin, Ohio, 43017-6221</td>
<td>Institute for Clarity in Documentation, P.O. Box 1212, Dublin, Ohio 43017-6221</td>
<td>The Thørväld Group, 1 Thørväld Circle, Hekla, Iceland</td>
</tr>
<tr>
<td><a href="mailto:trovato@corporation.com">trovato@corporation.com</a></td>
<td><a href="mailto:webmaster@marysville-ohio.com">webmaster@marysville-ohio.com</a></td>
<td><a href="mailto:larst@affiliation.org">larst@affiliation.org</a></td>
</tr>
</tbody>
</table>

The title block of each (regular or short) paper is followed by four blocks:

**ABSTRACT**
This paper provides a sample of a \LaTeX document which conforms, somewhat loosely, to the formatting guidelines for ACM SIG Proceedings\(^1\).

**CCS CONCEPTS**
- Computer systems organization → Embedded systems; Redundancy; Robotics; Network reliability;

**KEYWORDS**
ACM proceedings, \LaTeX, test tagging

**1 INTRODUCTION**
The proceedings are the records of a conference\(^2\). ACM seeks to give these conference by-products a uniform, high-quality appearance. To do this, ACM has some rigid requirements for the format of the proceedings documents: there is a specified format (balanced double columns), a specified set of fonts (Arial or Helvetica and Times Roman) in certain specified sizes, a specified live area, centered on the page, specified size of margins, specified column width and gutter size.

**2 THE BODY OF THE PAPER**
Typically, the body of a paper is organized into a hierarchical structure, with numbered or unnumbered headings for sections, subsections, sub-subsections, and even smaller sections. The command \section that precedes this paragraph is part of such a hierarchy\(^3\). \LaTeX handles the numbering and placement of these headings for you, when you use the appropriate heading commands around the titles of the headings. If you want a sub-subsection or smaller part to be unnumbered in your output, simply append an asterisk

Please note that the **CCS CONCEPTS** and the **Keywords** blocks are not required in demo or poster abstracts, but **mandatory** for regular or short papers.

Once you complete the permissions process with ACM, you receive an email from rightsreview@acm.org that will contain something like:

```
\copyrightyear{2018}
\setcopyright{acmcopyright}
\acmConference[Sensys'18]{The 16th ACM Conference on Embedded Networked Sensor Systems}{November 4–7 2017, Shenzhen, China}
\acmISBN{978-1-xxxx-xxxx-x/18/11}\acmPrice{\$15.00}
\acmDOI{http://dx.doi.org/xx.xxxx/xxxxxx.xxxxxx}
```

Sometimes, such emails may fall into your **SPAM/Junk folder**, so make sure that you let this email go to your mailbox, instead.

The ACM Reference format and the permissions block will be generated automatically, provided you have entered the required information above in your .tex file.
**Author Anonymity**

In most conferences, submission are reviewed by using either **blind** (reviewers are hidden from the authors) or **double blind** (reviewers don’t know the identity of the author(s), and the author(s) don’t know the identity of the reviewers) policies.

The authors should use anonymous option of the acmart.cls to hide their identity:

```latex
\begin{anonsuppress}
This work is continuation of Dr.~Trovato and his team at Institute for Clarity in Documentation. This paragraph will disappear when \texttt{anonsuppress} option is used.
\end{anonsuppress}
```

Here is the important content of the front page of a **Camera Ready** manuscript:

```latex
\begin{abstract}
This paper provides a sample of a \LaTeX document which conforms, somewhat loosely, to the formatting guidelines for ACM SIG Proceedings\cite{SIG-PROCEEDINGS}. Because the entire article is contained in the document environment, you can indicate the start of a new paragraph with a blank line in your input file; that is why this sentence forms a separate paragraph.
\end{abstract}

\begin{ccs}
\item Computer systems organization \rightarrow Embedded systems; Re-
\end{ccs}

\begin{keywords}
ACM proceedings, \LaTeX, text tagging
\end{keywords}

\begin{columns}
\column{0.3\textwidth}
Ben Trovato$^\dagger$
Institute for Clarity in Documentation
Dublin, Ohio
trovato@corporation.com

Lawrence P. Leipuner
Brookhaven Laboratories
leipuner@researchlabs.org

\column{0.3\textwidth}
G.K.M. Tobin$^\ddagger$
Institute for Clarity in Documentation
Dublin, Ohio
webmaster@marysville-ohio.com

Sean Fogarty
NASA Ames Research Center
Moffett Field, California
fogarty@ameares.org

\column{0.3\textwidth}
Lars Þorváld$^\S$
The Þorváld Group
Hekla, Iceland
larst@affiliation.org

Charles Palmer
Palmer Research Laboratories
San Antonio, Texas
opalmer@prl.com
\end{columns}

\begin{abstract}
This paper provides a sample of a \LaTeX document which conforms, somewhat loosely, to the formatting guidelines for ACM SIG Proceedings\cite{SIG-PROCEEDINGS}. This work is continuation of Dr. Trovato and his team at Institute for Clarity in Documentation. This paragraph will disappear when \texttt{anonsuppress} option is used.
\end{abstract}

\begin{section}{The Body of the Paper}
Typically, the body of a paper is organized into a hierarchical structure, with numbered or unnumbered headings for sections, subsections, sub-subsections, and even smaller sections. The command \texttt{section} that precedes this paragraph is part of such a hierarchy\cite{SIG-PROCEEDINGS}. \LaTeX handles the numbering and placement of these headings for you, when you use the appropriate heading commands around the titles of the headings. If you want a sub-subsection or smaller part to be unnumbered in your output, simply append an asterisk to the command name. Examples of both numbered and unnumbered headings will appear throughout the balance of this sample document.
\end{section}

\begin{thebibliography}{1}
\bibitem{SIG-PROCEEDINGS} SIG Proceedings Paper in \LaTeX Format—This is a Very Long Title That will not Fit in One Line\cite{SIG-PROCEEDINGS}.
\end{thebibliography}

\begin{otherlanguage}{en}
\begin{verse}
\section{Conclusion}
\end{verse}
\end{otherlanguage}

\begin{afterpage}
\begin{showfigure}
\end{showfigure}
\end{afterpage}

\begin{afterpage}
\begin{showfigure}
\end{showfigure}
\end{afterpage}

\begin{afterpage}
\begin{showfigure}
\end{showfigure}
\end{afterpage}
```

**The Body of the Paper**

Typically, the body of a paper is organized into a hierarchical structure, with numbered or unnumbered headings for sections, subsections, sub-subsections, and even smaller sections. The command `section` that precedes this paragraph is part of such a hierarchy. `LaTeX` handles the numbering and placement of these headings for you, when you use the appropriate heading commands around the titles of the headings. If you want a sub-subsection or smaller part to be unnumbered in your output, simply append an asterisk to the command name. Examples of both numbered and unnumbered headings will appear throughout the balance of this sample document.
Sample Driver

The following \texttt{latex} snippet is used to generate the above (less the author block) output:

```
\documentclass[sigconf]{acmart}
\usepackage{balance} % For balanced columns on the last page
\setcopyright{acmcopyright} % if you give the rights to ACM
\acmDOI{...} % DOI - Insert your DOI below...
\acmISBN{...} % ISBN - Insert your conference/workshop's ISBN below...
\acmYear{2017} % Insert Publication year
\copyrightyear{2017} % Insert Copyright year (typically the same as above)
\acmConference{Short Name}{Long Name}{dates}{venue}

\begin{document}
\title{Short Title}{Long Title for Your ACM Conference Paper}
\begin{abstract}
...
\end{abstract}
...
\begin{CCSXML}
<ccs2012>
<concept>
<concept_id>10010502.10010553.10010562</concept_id>
<concept_desc>Computer systems organization~Embedded systems</concept_desc>
<concept_significance>500</concept_significance>
</concept>
...
\end{CCSXML}
\ccsdesc[500]{Computer systems organization~Embedded systems}
...
\keywords{ACM proceedings, \LaTeX, text tagging}

\maketitle
\input{body-of-your-manuscript}
\balance
\bibliographystyle{ACM-Reference-Format}
\bibliography{name-of-your-bib-file}
\end{document}
```

You should generate the CCXML code with the tool at \url{http://dl.acm.org/ccs.cfm} and copy and paste it in your “driver” file.

Please note that you may need to put the \texttt{balance} towards the end of the \textit{body of your manuscript} file.

Running Headers

One of the changes in the new style is the “running heads”. There are three potential ugliness with this: Long conference name, long manuscript title, and long author list.

| ICCPS, April 2017, Pittsburgh, PA USA | Ben Trovato, G.K.M. Tobin, Lars Thørväld, Lawrence P. Leipuner, Sean Fogarty, Charles Palmer, John Smith, and Julius P. Kumquat |

But remember, you do not have to indicate typestyle changes when such changes are part of the \textit{structural} elements of your article.

Table 1: Frequency of Special Characters

<table>
<thead>
<tr>
<th>Non-English or Math</th>
<th>Frequency</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>π</td>
<td>4 in 5</td>
<td>Used in business</td>
</tr>
<tr>
<td>1</td>
<td>4 in 5</td>
<td>Used in business</td>
</tr>
<tr>
<td>2</td>
<td>4 in 5</td>
<td>Used in business</td>
</tr>
<tr>
<td>$</td>
<td>3 in 5</td>
<td>Used in business</td>
</tr>
<tr>
<td>4</td>
<td>4 in 5</td>
<td>Used in business</td>
</tr>
</tbody>
</table>

The details of the construction of the .bib file are beyond the scope of this sample document, but more information can be found in the \LaTeX User's Guide.
To avoid “long conference title” problem, use one of the following \acmConference{...} tags for SenSys’18 and BuildSys’18, respectively:

\acmConference[SenSys’18]{The 16th ACM Conference on Embedded Networked Sensor Systems}{November 4--7, 2018}{Shenzhen, China}
\acmConference[BuildSys’18]{The 5th International Conference on Systems for Energy-Efficient Built Environments}{November 7--8, 2018}{Shenzhen, China}

Further, if you have a long title, use the optional ShortTitle in the \title. As a rule-of-thumb, if your title is longer than a single column width, it should be shortened.

\title[SIG Proceedings Paper in LaTeX Format]{SIG Proceedings Paper in LaTeX Format---This is a Very Long Title That will not Fit in One Line}

And if you have three or more authors (or the list is longer than a single column width), use the following with the first author’s names:

\renewcommand{\shortauthors}{F. LastName et al.}

Lastly, use the names and last names of the authors in the “authors block” consistently. Pick one of the ways shown below and use it consistently everywhere, including your bibliographies:

Ben Travato
B. Travato
Lawrence P. Leipuner
L.P. Leipuner
Gordon K.M. Tobin
G.K.M. Tobin

Bibliographies and Citations

Regular staff of the institutions, such as ACM and IEEE, review manuscripts for their archival journals to provide consistency and coherency in those publications. All other publications, such as conference proceedings and newsletters, are typically compiled by different volunteers, leading to various inconsistencies. Recently, ACM requires an additional “block”, ACM Reference format, in every publication to make the citation process easier. However, this is only one side of the coin, as we have to provide the other side by properly citing our references. Most common error is to use incomplete references to save space in the body of a paper. Keep in mind that ACM uses the natbib package and the ACM-Reference-Format.bst for processing references. Check the User Guide (Section 2.10 Bibliography) and make sure that you provide all the required fields for each bib entry.

Acknowledgements

If you have to acknowledge someone or something in your manuscript, please insert your message between \begin{acks} and \end{acks}. This is no longer a \section in the manuscript.

Balanced Columns

Although not enforced by ACM, SenSys and BuildSys communities have been balancing the columns on the last page of each paper by using the balance package. Admittedly, this might be tricky at times, but the output is much nicer as can be seen below:
The authors would like to thank Dr. Yuhua Li for providing the matlab code of the BEPS method.

REFERENCES

[1] Boris Veytsman. $\LaTeX$ Class for Association for Computing Machinery, March 2018. The current version is 1.55.