A Guide to Using the IEEE Computer Society LaTeX Template for Magazines

First Author
First Author Affiliation
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This template (cs.tex) provides authors of IEEE Computer Society magazine articles with a guide for preparing LaTeX manuscripts for submission and a starting point for editing the contents of these manuscripts. Only LaTeX documents created using this template can be accepted by the IEEE Computer Society. Custom commands and the use of LaTeX packages not appearing in this template are not allowed. Please use this template to format your paper by replacing it's contents with that of your won. Replace this paragraph with your abstract. Abstracts should be a single paragraph and cannot contain math or citations. Please use the **\ieeecsAbstract{}** command for abstracts. If your paper does not contain an abstract please be sure to pass the **noAbstract** option to the csmagazine class. The abstract will appear in a sans-serif font.

Insert your introduction here, before any main sections. The introduction does not need a section heading and should be no longer than three paragraphs. It may contain math and citations. There is no special command needed for introductions, it can created by paragraphs of text that appear before the first **\section command**.

SECTIONS AND THE BODY OF THE ARTICLE

The body of an article is broken into sections. Up to three section levels are supported using **\section{Title}**, **\subsection{Title}**, and **\subsubsection{Title}**. Avoid "lone" headings, for example, a level-2 head without another level-2 head in the same section. Also avoid "stacked" headings. Two or more consecutive headings must be separated by intervening text (even if it's just a sentence or two).

Formatting text

Simple paragraphs can be entered without any additional LaTeX commands. For italic text please use the **\textit{}** command. *Italic text example*. For bold text please use the **\textbf{}** command. **Bold text example**. To emphasize text, please use the **\emph{}** command. *emphasized text example*.

URLs can be created using the \url{} command, for example: `https://www.computer.org` command. Text can be made $^{\text{superscript}}$ or $_{\text{subscript}}$ with the **\textsuperscript{}** and **\textsubscript{}** commands.

Special characters

To insert a special character(symbols other than the lowercase letters a–z, uppercase letters A-Z, numbers 0-9, and English punctuation marks) that cannot be easily created with a single LaTeX command such as \'{a}, please use one of the following options:

Option 1: Insert the glyph of the character within the **\{fontencoding{EN}\selectfont X}** command, where EN is the encoding to use and X is the glyph to output.

Option 2: Declare the character with **\DeclareUnicodeCharacter{character code}{LaTeX command}** in the preamble. You can then use that character with your text without additional commands. Example: ế.

Math

For numbered display equations, please use the **equation** environment. For display equations that should not be numbered please use either **equation*** or **\[...\]**. Please use these commands for display math rather than the double dollar signs '$$'.

Numbered display equation:

$$x^n + y^n = z^n \tag{1}$$

Unnumbered display equations:

$$\binom{n}{k} = \binom{n-1}{k} + \binom{n-1}{k-1}$$

$$\cos(2\theta) = \cos^2\theta - \sin^2\theta$$

For inline math please use the single '$' symbols. **Example:** $\int \frac{d\theta}{1+\theta^2} = \tan^{-1}\theta + C$.

Lists

Bulleted list

- First item
- Second item
- Third item
- Fourth item

Numbered List

1. The labels consist of sequential numbers.
2. The numbers start at 1 with every call to the enumerate environment.

FIGURES AND TABLES

When submitting your paper, please include all graphics referenced by your source file. File formats allowed for graphics are: **PDF, PNG, JPEG, and EPS**.

Figures

Figures should be created as a single graphic per figure. We cannot support multiple graphics as separate parts of the same figure. We also cannot support the use LaTeX packages to draw graphics within your article. If you have graphics created using a LaTeX drawing package or if you have multiple graphics for a figure, please first use the included figure.tex file to create a single PDF of your graphic that can then be reference by your article. Each figure requires a caption.

Figure 1. Add your figure caption here.

You can reference a figure using the **\ref{}**command. **Example:** see figure 1. To ensure accurate numbering of figures, place the **\label{}** command inside the \{ }caption command of your figure. Below is an example of a second figure, using an EPS file as the graphic.

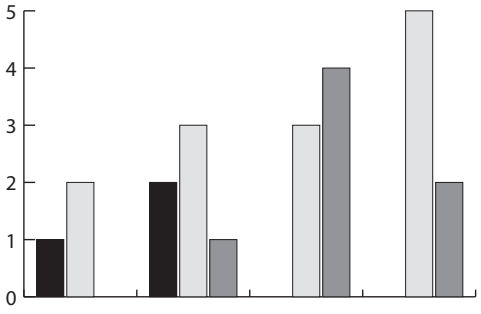

Figure 2. A figure using an EPS graphic.

Portraits

If your paper contains portraits of contributors, roundtable panelists, or interviewees where the portrait should be presented next to a brief bio or statement, please use the **ieeecsPortrait** enviroment. The portraits should align to the left with the bio wrapping around it on the right.

The bio of the contributor should go here. This could also be a statement.

Tables

Use the tabluar environment to build your table within LaTeX. Tables require a title, added using the **\caption{}** command. Tables are to be used to represent text in a tabular environment. Tables that are created as a graphic or contain graphics should instead use the figure environment.

Table 1. The table title goes here.

col1	col2	col3
Multiple row	cell2 cell5 cell8	cell3 cell6 cell9

*If the table has a footnote add it after the table with the **ieeecsTableFootnote** command.

DISTINCT ARTICLE ELEMENTS

Algorithms

Algorithms can be added by using lstlisting environment. Algorithms will have a thin frame around them and will be set in a monospace font. Algorithms require a caption and a label. Math can be added to algorithms using LaTeX between the characters (%* and %*).

```
1. Example of using lstlisting to write algorithms
2. ∫ dθ/(1+θ²) = tan⁻¹ θ + C.
...
10. End
```

Algorithm 1: Add a caption for your algorithm here.

Program Code

Program code should be added using the programCode environment. You can pass the language type as an optional parameter to properly style the code. Program code will not have a frame around it and will not have a caption.

Sample block of code formatted as PHP:

```
[language=PhP]
$articleBaseName = basename($articleTeXFile, ".tex");
$articleXMLFile = basename($articleTeXFile, ".tex");
```

Boxed Text

The **ieeecsBoxedText** environment can be used to set apart text. Please pass the content of the boxed text as a parameter to this environment.

Logos

Popular logos related to LaTeX are supported: (La)TeX BibLaTeX XeLaTeX METAPOST, and METAFONT.

REFERENCES, ACKNOWLEDGEMENTS, AND AUTHOR BIOS

A .bib file is required for your references. We will be using BibTeX to compile the references of your paper. Please use **\citep** to add citations to your paper. Examples [1] and [2]. Please do not include footnotes or endnotes in your paper. [1,2]

ACKNOWLEDGEMENTS

Enter an acknowledgment here, within the **ieeeCSAcknowledgment** environment.

REFERENCES

1. L. Lamport, “LATEX user’s guide and reference manual,” 1994.

2. M. Goossens, S.P. Rahtz, and F. Mittelbach, *The graphics companion: illustrating documents with TEX and PostScript*, vol. 3, Addison-Wesley Professional, 1997.

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