# How to Use the IEEEtran Macro Package for Preparing a Manuscript for the FedCSIS e-Proceedings

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***Abstract*—This document describes the rules one should follow to prepare the article for the FedCSIS e-proceedings The abstract may be up to 150 words.**

## I. Introduction

TO PREPARE the article for the FedCSIS e-proceedings, please use the IEEEtran LaTeX $2_\varepsilon$ macro package (document class `IEEEtran`). This document contains some hints how to use certain LaTeX packages to fit the conference proceedings format. You can use the source of this document as a template for typesetting of your paper.

### A. For Beginners

For LaTeX beginners I would like to recommend to visit the site of the TeX Users Group and, specifically the book "The Not So Short Introduction to LaTeX $2_\varepsilon$," by Tobias Oetiker: http://www.tug.org/begin.html

*Remark 1.1:* Using LaTeX $2_\varepsilon$ macros authors should define only the *logical structure* of the text. You are not allowed to use macros that explicitly change fonts, break lines, pages. etc.

### B. Macros downloading

The IEEEconf LaTeX $2_\varepsilon$ macro package can be downloaded from CTAN: http://www.ctan.org/tex-archive/macros/latex/contrib/IEEEconf/ as well as from the conference site. The conference cite contains also the latest version of this document and its source.

## II. Preamble

### A. Document Class

Please, initialize the document class in the standard way and use the command **`\IEEEoverridecommandlockouts`** to unlock some macros:

```
\documentclass[conference]{IEEEtran}
\IEEEoverridecommandlockouts
```

This work was not supported by any organization

### B. Polish accent "ogonek"

To make the polish accent ˛ ("ogonek") available use package `fontenc` with the option `OT4,T1`

```
\usepackage[OT4,T1]{fontenc}
```

### C. Initial Drop Cap Letter

The first letter of a journal paper is a large, capital, oversized letter which descends one line below the baseline. Such a letter is called a "drop cap" letter. The other letters in the first word are rendered in upper case. This effect can be accurately produced using the IEEEtran command **`\IEEEPARstart{}{}`**. The first argument is the first letter of the first word, the second argument contains the remaining letters of the first word. For instance:

```
\IEEEPARstart{W}{ith}
```

Note that the second word should also be rendered in upper case if the first word is very short (less than 3 letters). The drop cap of this document was produced with

```
\IEEEPARstart{T}{o prepare}
```

### D. ORCID

Place ORCIDs of all the authors in the line next to author's name, in the **`\IEEEauthorblockA{}`** block.

### E. Last Page Columns Balancing

To balance the column lengths on the last page of the document use the package `pbalance`. It is sufficient to include the package in the preamble:

```
\usepackage{pbalance}
```

## III. Figures and Tables

To insert a figure you are encouraged to use the `graphicx` package:

```
\usepackage[dvips]{graphicx}
```

Figures format should be inserted in the `figure` environment, as follows:

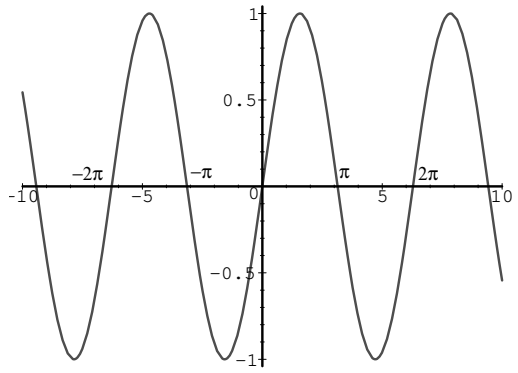


Fig. 1. Sinusoid

```
\begin{figure}[tbp]
\centering
\includegraphics[width=0.75\hsize]
     {test.pdf}
\caption{Sinusoid}
\end{figure}
```

Parameters of the command **\includegraphics** are described in the documentation of the `graphicx` package.

Prepare your figures using vector graphics and converting it to standard pdf format. Photo files should be in high-resolution (at least 300 DPI) JPEG files. Consider using of LaTeX packages (TeXDraw, XYpic, TikZ, etc) for producing high-quality schemes and graphics. If your graphical editor is Libre/Microsoft Office, export our chart as pdf/eps file.

Pay attention that the figure caption is placed *below* the figure, while the table caption is placed *above* the table (cf. table I). Figures or tables may span both columns, if necessary (use `figure*` or `table*` environments).

Position figures and tables at the tops and bottoms of columns. Avoid placing them in the middle of columns. Large figures and tables my span across both columns. Figure captions should be below the figures; table captions should be above the tables. Avoid placing figures and tables before their first mention in the text. Use the abbreviation "Fig. 1," even at the beginning of a sentence.

## IV. Algorithms

For algorithms typesetting the packages `algorithmic` and `algorithm` are used.

The first one defines environment `algorithmic`, inside which algorithms are inputted. In the following example the code from the left side produces the output shown on the right side. The optional parameter `[2]` defines lines numeration of the algorithm.

The package `algorithm` defines new float environment `algorithm` which is similar to floats `figure` and `table`.

The usage of the `algorithm` environment is presented in the example 4.1, output—algorithm 1—is respectively given on the page 2.

*Example 4.1 (the `algorithm` environment):* output is given on the page 2.

```
\begin{algorithm}[tbp]
\caption{Calculating $x$ to the
power~$n$\label{example}}
\begin{algorithmic}[2]
\REQUIRE $n\ge 0$
\ENSURE $a=x^n$
\STATE $k\leftarrow n$; $a\leftarrow 1$;
\STATE $b\leftarrow x$;
\WHILE[Invariant: $x^n=a\cdot b^k$]
{$k>0$}
\IF{$k$ is even}
\STATE $k\leftarrow k/2$;
\STATE $b\leftarrow b\cdot b$;
\ELSE[$k$ is odd]
\STATE $k\leftarrow k-1$;
\STATE $a\leftarrow a\cdot b$;
\ENDIF
\ENDWHILE
\end{algorithmic}
\end{algorithm}
```

**Algorithm 1** Calculating $x$ to the power $n$

**Require:** $n \geq 0$
**Ensure:** $a = x^n$
$k \leftarrow n$; $a \leftarrow 1$;
2: $b \leftarrow x$;
**while** $k > 0$ **do** {Invariant: $x^n = a \cdot b^k$}
4: **if** $k$ is even **then**
$k \leftarrow k/2$;
6: $b \leftarrow b \cdot b$;
**else** {$k$ is odd}
8: $k \leftarrow k - 1$;
$a \leftarrow a \cdot b$;
10: **end if**
**end while**

## V. Code fragments

To include the programming code fragment, please use the package `minted`. This package "understands" almost all the programming languages and their dialects from BASIC to XML. Particulars of the package usage are given in the package documentation. Example 5.1 we shows implementation of the algorithm 1 in C++. Examples contain TeX-code and the corresponding output.

## VI. References

For bibliography references use the standard LaTeX tools. Refer simply to the reference number, as in [3]. Do not use "Ref. [3]" or "reference [3]" except at the beginning of a sentence: "Reference [3] was the first…". Do not put footnotes in the reference list. IEEE Transactions no longer use a journal prefix before the volume number. For example, use "IEEE Trans. Magn., vol. 25," not "vol. MAG-25."

TABLE I
DEFINING CHARACTERISTICS OF FIVE EARLY DIGITAL COMPUTERS

| Computer | First operation | Place | Decimal/Binary | Electronic | Programmable | Turing complete |
|---|---|---|---|---|---|---|
| Zuse Z3 | May 1941 | Germany | binary | No | By punched film stock | Yes (1998) |
| Atanasoff-Berry Computer | Summer 1941 | USA | binary | Yes | No | No |
| Colossus | 1943–1944 | UK | binary | Yes | Partially, by rewiring | No |
| Harvard Mark I–IBM ASCC | 1944 | USA | decimal | No | By punched paper tape | Yes (1998) |
| ENIAC | 1944 | USA | decimal | Yes | Partially, by rewiring | Yes |
| | 1948 | USA | decimal | Yes | By Function Table ROM | Yes |

*Example 5.1 (C++):* output is shown on the page 3.

```
\begin{minted}{c++}
int power(int x,int n){
    int k,a,b;
    k=n; a=1; b=x;
    while(k>0){//Invariant: x^n=a*b^k
        if (k % 2==0){
            k/=2;
            b*=b;
        }
        else{
            k--;
            a*=b;
        }
    }
    return a;
}
\end{minted}
```

**Algorithm 2** Calculating $x$ to the power $n$ in C++

```
int power(int x,int n){
    int k,a,b;
    k=n; a=1; b=x;
    while (k>0) {// Invariant: x^n=a*b^k
        if (k % 2==0){
            k/=2;
            b*=b;
        }
        else{
            k--;
            a*=b;
        }
    }
    return a;
}
```

Give all authors' names; do not use "et al." unless there are six authors or more. Papers that have not been published, even if they have been submitted for publication, should be cited as "unpublished" [6]. Papers that have been accepted for publication should be cited as "in press" [7]. Capitalize only the first word in a paper title, except for proper nouns and element symbols. For papers published in translation journals, please give the English citation first, followed by the original language citation [8].

### A. DOI

Please, add a DOI information to your bibliography using the following format

```
\bibitem{citation}
Ghosh, M. K. and Harter, M. L.
\textit{A viral mechanism for remodeling
  chromatin structure in G0 cells,}
Mol. Cell. 12:255-260, 2003
\url{https://dx.doi.org/10.1016/S1097}
```

*BibTeX users:* Since `IEEEtran.bst` does not officially support doi yet, use the `myIEEEtran.bst` by Gerald Q. "Chip" Maguire Jr. (Available also at the conference site.) The template for doi in bib file is as follows:

```
@article{foo2010,
  author = "Mrinal K. Ghosh
         and Marian L. Harter",
  journal = "Mol. Cell.",
  year = 2003,
  title = "A viral mechanism for
   remodeling chromatin structure
   in G0 cells",
  doi = {10.1016/S1097-2765(03)00225-9}
}
```

## VII. SOME COMMON MISTAKES

The word "data" is plural, not singular. In American English, periods and commas are within quotation marks, like "this period." A parenthetical statement at the end of a sentence is punctuated outside of the closing parenthesis (like this). (A parenthetical sentence is punctuated within the parentheses.) A graph within a graph is an "inset," not an "insert." The word alternatively is preferred to the word "alternately" (unless you really mean something that alternates). Do not use the word "essentially" to mean "approximately" or "effectively." Be aware of the different meanings of the homophones "affect" and "effect," "complement" and "compliment," "discreet" and "discrete," "principal" and "principle." Do not confuse "imply" and "infer." The prefix "non" is not a word; it should be joined to the word it modifies, usually without a hyphen. There is no period after the "et" in the Latin abbreviation "et al." The abbreviation "i.e." means "that is," and the abbreviation

"e.g." means "for example." Microsoft Office in not a graphical editor. An excellent style manual and source of information for science writers is [4].

## VIII. Conclusion

A conclusion section is not required. Although a conclusion may review the main points of the paper, do not replicate the abstract as the conclusion. A conclusion might elaborate on the importance of the work or suggest applications and extensions.

## IX. Submission

Submitting the article, please, provide

- Reviewing:
  - PDF file with the article. PDF will be sent to the referees.
- Final version:
  - PDF file with the article.
  - The source of the article.
  - Files of all the inserted graphics.
  - Bibtex files if any were used.

## Appendix

Appendixes, if needed, appear before the acknowledgment.


## Acknowledgment

The preferred spelling of the word "acknowledgment" in America is without an "e" after the "g." Try to avoid the stilted expression, "One of us (R. B. G.) thanks ..." Instead, try "R. B. G. thanks..." Put sponsor acknowledgments in the unnumbered footnote on the first page.


## References


[1] J. G. F. Francis, "The QR Transformation I," *Comput. J.,* vol. 4, 1961, pp. 265–271.

[2] H. Kwakernaak and R. Sivan, *Modern Signals and Systems,* Prentice Hall, Englewood Cliffs, NJ; 1991.

[3] D. Boley and R. Maier, "A Parallel QR Algorithm for the Non-Symmetric Eigenvalue Algorithm," *in Third SIAM Conference on Applied Linear Algebra,* Madison, WI, 1988, pp. A20.

[4] M. Young, *The Technical Writer's Handbook.* Mill Valley, CA: University Science, 1989.

[5] IEEE Guidelines for Author Supplied Electronic Text and Graphics, http://www.ieee.org/portal/cms_docs_iportals/iportals/publications/journmag/transactions/eic-guide.pdf

[6] K. Elissa, "Title of paper if known," unpublished.

[7] "R. Nicole, Title of paper with only first word capitalized," J. Name Stand. Abbrev., in press.

[8] Y. Yorozu, M. Hirano, K. Oka, and Y. Tagawa, "Electron spectroscopy studies on magneto-optical media and plastic substrate interface," IEEE Transl. J. Magn. Japan, vol. 2, pp. 740–741, August 1987 [Digests 9th Annual Conf. Magnetics Japan, p. 301, 1982].