The easychair Class File Documentation and Guide for Authors[*]

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Abstract

In order to ease the lives of authors, editors, and trees, we present an easy-to-read guide to the easy-to-use easychair LaTeX2e document style class for EasyChair-based electronic and on-paper publishing of workshop and conference proceedings.

Contents

1 Introduction

The easychair class was designed to be easy to use, and specifically favors electronic and on-paper publishing by the EasyChair conference system [?], including the EasyChair EPiC Series and EasyChair Kalpa Publications. EasyChair is a free conference management system that is flexible, easy to use, and has many features to make it suitable for various conference models. It is currently probably the most commonly used conference management system [?].

The easychair class was designed according to some requirements, which are described in Appendix ??. An article that occupies approximately 15 LNCS-formatted pages takes up approximately 14 easychair pages.

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[*]Other people who contributed to this document include Maria Voronkov (Imperial College and EasyChair) and Graham Gough (The University of Manchester).
[†]Designed and implemented the class style
[‡]Did numerous tests and provided a lot of suggestions
[§]Masterminded EasyChair and created versions 3.0–3.5 of the class style

Figure 1: EasyChair logo

2 Typesetting

Typesetting with easychair is, well, easy. Just by using the document class entry in the document's preamble as follows: `\documentclass{easychair}` the typesetting work is nearly done. The easychair class is a relatively conservative extension of the standard `article` class, so most of the environments, section headers, etc. defined by `article` are available.

2.1 Generalities

The following are the general default parameters easychair introduces into the typesetting aspect of articles. If you use easychair for proceedings or other kinds of publishing through EasyChair, do not alter these – papers deviating from the formatting standards will be rejected by EasyChair.

1. The default paper size is US letter. It can be explicitly set to A4 (`a4paper`) or letter (`letterpaper`) paper in the document class entry, e.g.:
   `\documentclass[a4paper]{easychair}`

2. The print area for both letter and A4 paper sizes is 145x224 mm. This size has been selected to allow for inexpensive printing using our current print-on-demand publisher.

3. The base font is Computer Modern. The base font size is 10pt. If you use any other font size, there is no guarantee that the produced document will look nice or fit into our standard page size.

4. The references list is condensed. The default bibliography styles, such as `plain`, `abbrv`, and `alpha`, are suggested.

5. PNG, JPG, and PDF images are supported, i.e., those that are supported by the standard `graphicx` package [?], and render nicely in online versions of PDF documents. This document shows some examples of JPG and PDF images, for example in Figure ??. If the papers are designed for publishing in print, the images should be at least 300dpi in resolution.

2.2 Front Matter

The front matter of an easychair article follows the `article` style, augmented with the `\titlerunning` and `\authorrunning` commands for use by authors. For the `\author` command with multiple authors, use `\and` to separate authors from different institutions, as done in this document. Institutions are defined using `\institute` in a similar way and affiliations of authors assigned using `\inst`. Authors must set the `\titlerunning` and `\authorrunning`. For example, the front matter of this document defined the authors and title as follows:

```
\title{The {\easychair} Class File\\
       Documentation and Guide for Authors%
\thanks{Other people who contributed to this document include Maria Voronkov
  (Imperial College and EasyChair) and Graham Gough (The University of
  Manchester).}}

 Authors are joined by \and. Their affiliations are given by \inst, which indexes
 into the list defined using \institute

\author{
Serguei A. Mokhov\inst{1}\thanks{Designed and implemented the class style}
\and
   Geoff Sutcliffe\inst{2}\thanks{Did numerous tests and provided a lot of suggestions}
\and
   Andrei Voronkov\inst{3}\inst{4}\inst{5}\thanks{Masterminded EasyChair and created
      versions 3.0--3.5 of the class style}
}

 Institutes for affiliations are also joined by \and,
\institute{
  Concordia University,
  Montreal, Quebec, Canada\\
  \email{mokhov@cse.concordia.ca}
\and
   University of Miami,
   Miami, Florida, U.S.A.\\
   \email{geoff@cs.miami.edu}\\
\and
   University of Manchester,
   Manchester, U.K.\\
   \email{andrei@voronkov.com}\\
\and
   Chalmers University of Technology,
   Gothenburg, Sweden
\and
   EasyChair
 }

\authorrunning{Mokhov, Sutcliffe and Voronkov}
\titlerunning{The {\easychair} Class File}
```

2.3   Page Numbering

Page numbers are at the bottom of every page. Authors must leave the page numbers in as-is. When EasyChair proceedings and Procedia volumes are processed by EasyChair, the correct volume page numbers will be inserted automatically.

2.4   Section Headings and Capitalization

Section and paragraph headings in easychair are invoked via the standard commands, such as \section, \subsection, \subsubsection, and \paragraph. Generally, every non-trivial word in a heading must be capitalized according to general capitalization guidelines. A reasonable

rule to use is that all prepositions, coordinating conjunctions and articles having four or fewer letters should not be capitalized. If you do not know what it means, simply do not capitalize the following words: *amid, anti, as, at, atop, but, by, down, for, from, in, into, like, near, next, of, off, on, onto, out, over, pace, past, per, plus, qua, save, than, till, to, up, upon, via, with, for, and, nor, but, or, yet, so, a, an, the.* For example, if you want to call your paper "oldest but goldest", then the proper title for it is "Oldest but Goldest". "Oldest but goldest" is wrong (since "goldest" is not capitalized) and "Oldest But Goldest" is wrong ("but" should stay lower-cased since it belongs to the list of words above.) Needless to say, "OLDEST BUT GOLDEST" is very wrong.

Paragraph headings should not be capitalized and should have a trailing period. That is, you should write

```
\paragraph{EasyChair is cool.}
```

rather than

```
\paragraph{EasyChair is cool}
```

unless your aim was to write something like

```
\paragraph{EasyChair is cool} when you use it for publishing.
```

Of course, you are welcome to replace the trailing period by any other punctuation mark, for example

```
\paragraph{EasyChair is cool!}
```

See the examples in this document, e.g., Section **??** is a section, this (Section **??**) is a subsection, and Section **??** is a subsubsection.

2.4.1   Subsubsection Header

This is a subsubsection.

Paragraph header.   This is a paragraph. One way of saving space when hyper-references are not essential is to use paragraphs instead of subsubsections.

2.5   Mathematics

Mathematics can be done inline for simple things, e.g., an equation $x = 0$, possibly with super and subscripts, e.g., $x_k^2 \approx 27$, Greek letters, e.g., $\alpha \cup \Theta \neq \gamma$, etc. Larger formulae must be done using \[\] bracketing, e.g.,

$$\int_0^1 x dx = \left[\frac{1}{2}x^2\right]_0^1 = \frac{1}{2}$$

or using \begin{equation} and \end{equation} for numbered equations, e.g.,

$$e^x = \sum_{n=0}^{\infty} \frac{x^n}{n!} = \lim_{n \to \infty} (1 + x/n)^n \tag{1}$$

Use `\begin{align*}` and `\end{align*}` (or without the * include number) to align equations, e.g.,

$$x^2 + y^2 = 1$$
$$y = \sqrt{1 - x^2}$$

Fonts, using `\matcal` and others can also be used in the math mode: $\mathcal{ALC}$.

2.6 Tables

Table **??** shows an example of a table of data that was conveniently available (i.e., the data has nothing to do with easychair) apart from being related to the research of two of its authors.

ATP System	LTB /100	Avg time	Prfs out	SOTA Con.	μ Eff.	CYC /35	MZR /40	SMO /25
Vampire-LTB 11.0	69	24.5	69	0.37	28.1	23	22	24
iProver-SInE 0.7	67	76.5	0	0.36	8.8	28	14	25
SInE 0.4	64	75.3	64	0.32	8.5	26	13	25
leanCoP-SInE 2.1	35	110.8	35	0.23	3.2	23	1	11
E-LTB 1.1pre	18	63.4	0	0.21	2.8	7	9	2
EP-LTB 1.1pre	18	77.8	18	0.21	2.3	7	9	2
E-KRH'-LTB 1.1.3	0	–	–	–	–	0	0	0

Table 1: LTB division results

2.7 References

References must be provided in a `.bib` file, so that BibTeX can be used to generate the references in a consistent style in a volume. The preferred styles are `plain` and `alpha`. For example, the references for this paper are generated from the lines

```
\bibliographystyle{plain}
\bibliography{easychair}
```

and a way to compose the entires, e.g. citing this class style [**?**] is below:

```
@misc
{
  easychair-latex-class,
  author       = {Serguei A. Mokhov and Geoff Sutcliffe and Andrei Voronkov},
  title        = {The {\sf easychair} Class File Documentation and Guide
                  for Authors},
  year         = {2008--2011},
  howpublished = {[online]},
  note         = {Available at \url{http://easychair.org/easychair.zip}}
}
```

3 Installation and Usage Instructions

3.1 Installation

The "installation" of the easychair document class is easy. Download the latest version of the easychair.zip package from http://www.easychair.org/easychair.zip and unzip it in the directory where you will prepare your paper. You will get the following files, out of which you may need to keep only the easychair.cls style class if you are familiar with the rest of the files and do not require them to get started. We are also working to make easychair available from CTAN [?], such that it can be installed with the popular TEXLive [?] and MiKTEX [?] LATEX package management systems.

- easychair.cls – the class file that this is all about.

- easychair-a4.pdf – the PDF version of this guide rendered using a4paper option.

- easychair.tex – the LATEX source of this guide, and easychair.bib – the supporting bibliography entries found starting on page ??.

- logoEC.pdf – the PDF version of the EasyChair logo rendered in Figure ?? and throneEC.jpg – the JPG version of the easy throne rendered in Figure ??.

3.2 Required Packages

The easychair class relies only on packages deemed standard and shipped by most LATEX distributions in the worlds of Linux (current texlive [?] or older tetex), MacOS X, and Windows (via Cygwin or MiKTEX). If for some reason your distribution is old or doesn't have the packages listed below, you can always obtain a copy from CTAN [?]. Note that EasyChair loads this packages automatically so you don't have to use \usepackage to use any of these packages.

- url [?] (included also by hyperref automatically) – to provide URL rendering support for the monospaced font, which takes care of special characters as well as line wrapping.

- hyperref [?] – to allow hyperlinking of URLs and cross references within an article. Its options are set to either letterpaper or a4paper, depending on the \documentclass options.

- graphicx [?] – the standard package for rendering PNG, JPG, and PDF graphic images, primarily in figure environments.

- optional mathptmx [?] – Times base font for compactness (use with the withtimes easychair option).

- listings [?] – to allow highlighted source code listing styles.

- latexsym [?] – to provide common math and other symbols.

- amsthm [?] – to provide $\mathcal{AMS}$ theorem-like environments.

- empheq [?] – to provide equation environments, etc.

- geometry [?] – to set easychair margins, outlined in Section ??.

- lastpage [?] – to allow computationally referencing the last page.

- `fancyhdr` [**?**] – for running heads.

- `footmisc` [**?**] – to ensure that footnotes are always at the bottom.

- optional `makeidx` [**?**] – for index generation (use with the `thesis easychair` option).

- `eso-pic` [**?**] – for draft versions and checking page overflows vs. a border drawn around the headers, footers, and the main body of the article.

3.3   Recommended Packages

Here is a list of some packages that this guide's authors have experimented with, and which are suitable for inclusion if needed by article authors. These packages must be loaded using `\usepackage`. In general, authors may use any standard packages provided they do not change the basic layout and font settings established by the easychair class. Such packages must be provided with the submission of articles.

- `rotating` [**?**] – to rotate floats (figures and tables) on the page, when wide tables or figures do not fit in portrait layout.

- `pdflscape` [**?**] – similar to `rotating`, but also allows rotating text to make it conveniently viewable in a PDF viewer that supports individual rotated pages. A possible disadvantage is that a page break is forced, which may create gaps before or after the landscape page.

- `algorithm2e` [**?**] – provides a figure-like algorithm environment for formal algorithm presentation with highlighting.

3.4   Compiling

`pdflatex` [**?**] is the preferred tool for producing PDF files with easychair class documents. The author kit (`easychair.zip`) includes some minimal automation that authors can use at their discretion.

- Linux and UNIX-like platforms (also works under Cygwin and MacOS X): A `Makefile` is provided for the GNU `make` [**?**] utility, so this document can be compiled by typing `make` at the terminal prompt (on the systems where both GNU and non-GNU versions of `make` are installed, one may need to use `gmake`).

- Microsoft Windows: TEXnicCenter [**?**] or LEd [**?**] and MiKTEX [**?**] as their backend are common tools for LaTeX processing under Microsoft Windows. The former provide a GUI front-end to LaTeX, and the latter is the Windows native-compiled binaries and standard packages with a comprehensive package update tool. The `easychair.tcp` project file is provided for TEXnicCenter users, as well as `easychair.lpr` for LEd users.

- MacOS X: TeXShop [**?**] is a tool for LaTeX processing under Mac OS X. It provides a GUI front-end to LaTeX. The backend can be installed through the `fink` [**?**] repository or the Darwin Ports.

Some authors use packages that require the use of `latex` instead of `pdflatex`, most notably `pstricks` and its derivatives. If switching to modern packages, such as `tikz` is not an option, these authors can use the easychair class with `latex`.

3.5   Bug Reports

Please report bugs, errors, and omissions you find with the easychair class to its current maintainer, Andrei Voronkov, at andrei@voronkov.com. Any *constructive* feedback is always welcome. If anybody has a very hard question, we might be unable to answer it without Sergei. If anybody knows his whereabouts, Geoff and Andrei have the ransom money ready.

4   Avoiding Text Overflows

When used in EasyChair, the easychair class is intended for publishing, including printing. This implies that the text of your document should not overflow the page dimensions. This section gives some practical advice on how you can avoid text overflows. When you run `pdflatex` or `latex` on your files, you sometimes get warnings like

```
LaTeX Warning: Overfull \hbox (7.43138pt too wide) in paragraph at lines 994--994
```

or

```
LaTeX Warning: Float too large for page by 55.21666pt on input line 638.
```

They mean what they say: your text overflows the allowed space. When you prepare a PDF document that will only be used online or as a draft, in many cases you can ignore these warnings, since they only make your document uglier than it could be but it remains still readable. However, for documents that are supposed to be printed, overflows make a lot of difference. There is no universal recipe on how to make your text fit into the page. However, there are some common cases that can be easily fixed using the tricks described here.

4.1   Using the `debug` Option to Check for Overflows

A general guideline is that you should first check how the alleged overflows looks in reality. For example, some LaTeX overflows are invisible or hardly noticeable for people and overlows by less than 4pt look OK anyhow. The easychair class has an option `debug` that adds to each page of your documents a red frame corresponding to the allowed page dimensions. Figure **??** on page **??** shows an example of a page created using this style. With such a red frame, you can clearly see any overflows apart from very minor ones.

4.2   Tables

Many page overflows happen because of large tables. In many case these overflows can be easily removed by slightly reducing padding added by LaTeX to every column. It is controlled by the LaTeX command `\tabcolsep` whose value by default is 6pt. Even small changes in the value of this command may give drastic reductions in the width of tables. This is illustrated in Figure **??** on page **??**. Note though that there is no free lunch: smaller values for this command may result in lower redability.

4.3   Images

Images included using `\includegraphics` are easy to resize since one can specify the size of the result explicitly. For example, Figure **??** shows three copies of the same image having different sizes obtained using the following commands:

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Abstract

In order to ease the lives of authors, editors, and trees, we present an easy-to-read guide to the easy-to-use easychair LaTeX2e document style class for EasyChair-based electronic and on-paper publishing of workshop and conference proceedings.

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[*] Other people who contributed to this document include Maria Voronkov (Imperial College and EasyChair) and Graham Gough (The University of Manchester).
[†] Designed and implemented the class style
[‡] Did numerous tests and provided a lot of suggestions
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1

Figure 2: A page of a document created using the debug option

ATP System	LTB	Avg	Prfs	SOTA	μ	CYC	MZR	SMO
Vampire-LTB 11.0	69	24.5	69	0.37	28.1	23	22	24
iProver-SInE 0.7	67	76.5	0	0.36	8.8	28	14	25

ATP System	LTB	Avg	Prfs	SOTA	μ	CYC	MZR	SMO
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Vampire-LTB 11.0	69	24.5	69	0.37	28.1	23	22	24
iProver-SInE 0.7	67	76.5	0	0.36	8.8	28	14	25

Figure 3: Original table and tables with `tabcolsep` set to 5pt, 3pt, and 1pt

```
\includegraphics[width=0.5\textwidth]{throneEC.jpg}
\includegraphics[width=0.3\textwidth]{throneEC.jpg}
\includegraphics[width=0.15\textwidth]{throneEC.jpg}
```

4.4   A Universal Recipe

LaTeX has a very powerful weapon for reducing the size of almost anythings. More precisely, it can reduce anything producing what LaTeX considers a box. This weapon is called `\scalebox`. Consider an example (check the source of this file to see how it was produced).

year	users
2007	47,753
2008	114,494
2009	207,506
2010	371,054

The number of users of EasyChair and one of its logos, scaled to the number of users in 2010

This is what happens when we put (almost) the same LaTeX code in `\scalebox{0.55923}{...}` to scale it down to the number of users in 2009:

year	users
2007	47,753
2008	114,494
2009	207,506
2010	371,054

The number of users of EasyChair and one of its logos, scaled to the number of users in 2009

We can scale it down even further to the 2008 figure using `\scalebox{0.30856}{...}`:

year	users
2007	47,753
2008	114,494
2009	207,506
2010	371,054

The number of users of EasyChair and one of its logos, scaled to the number of users in 2008

or further down to 2007:

year	users
2007	47,753
2008	114,494
2009	207,506
2010	371,054

This size reduction technique is very efficient: using the right scale you may post your whole article on Twitter in a single tweet. However, it may also may parts of your text virtually unreadable with an unfortunate side effect of annoying reviewers.

5   Submitting Your Article Through EasyChair

This section is intended only for the authors and editors of EasyChair proceedings and Procedia volumes.

When you prepare an article for either of these, it should be submitted through EasyChair. EasyChair automates the submission process as much as possible and goes to a great length to ensure that your article can be published and printed. Publication for EasyChair means much more than just putting a PDF of your article online. It collects a some meta-information about the article to classify it, find similar articles, make it easily searchable, and index it in various Web services, such as DBLP. This section explains how EasyChair processes your article.

5.1   Submitting the Article

Submitting the article is easy. All you should do is to put the source of your article in a single zip file. The source must contain all auxiliary files required to create a PDF file of your article: this includes images, bibliography, and all non-standard LaTeX packages you used[1] For example, suppose that your main LaTeX file is `main.tex`, it inputs another file `macros.tex` and uses the file `biblio.bib` to produce the bibliography. Suppose it also uses two images `images/easy.jpg` and `images/easy.jpg`. Then you should create a zip archive containing all these files. Suppose all these files are put in a directory `mypaper` on your computer, where `images` is a subdirectory of `mypaper`

---

[1] A non-standard LaTeX package is a package that is not included in CTAN.

On almost any operating system (Linux, Windows, or Mac) you can achieve this by using the following sequence of commands:

```
cd mypaper
zip -r mypaper.zip *
```

This will create a zip archive `mypaper.zip` including all files in the directory `mypaper` and its subdirectories.

5.2   EPiC Series and Kalpa Publications

If you publish your article in the EasyChair EPiC series, our aim is to produce a nicely looking EPiC Series header, see Figure **??** on page **??** for an idea. The images and information in the header will be added by EasyChair automatically and depend on the subseries and the volume information.

To ensure that the layout of your document will not change when the header is added, you should use the option `EPiC` as follows:

```
\documentclass[EPiC]{easychair}
```

This will reserve space for the header on the top of the first page of your article.

6   Future Work

We plan to further strengthen the easychair class and promote it for electronic publishing for EasyChair-powered conferences and workshops, and take over the world, as shown in Figure **??**. We aim at creating a new model of *affordable publishing*, where anybody can become a low-cost publisher. The EasyChair EPiC Series and the EasyChair Kalpa Publications are our first contributions to affordable open access publishing.

7   Acknowledgments

EPiC
Computer
Science

The easychair Class File
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[§]Masterminded EasyChair and created versions 3.0–3.4 of the class style
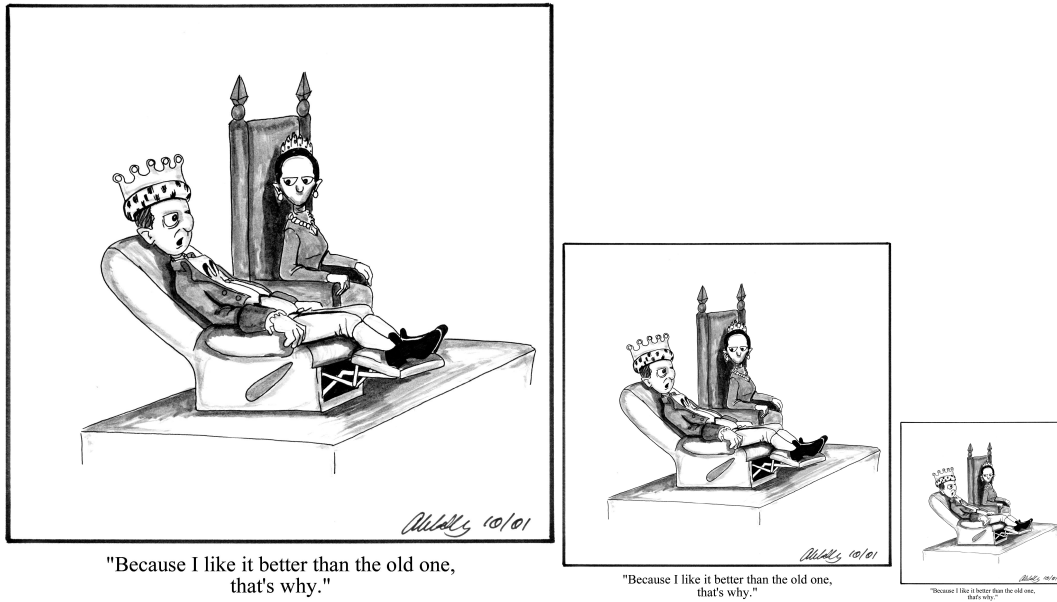
1

Figure 4: This document with an EPiC Series header

Figure 5: Why one should use EasyChair

A   easychair Requirements Specification

The following high-level requirements were set for the development of the easychair class, and were refined as development went along.

1. The style should be easy to use. The average LATEX user should not need to read a long manual.

2. It should be economical in space but the text should be nice-to-read.

3. It should use fonts producing a reasonable-quality PDF.

4. The bibliography should produce hyperlinks.

5. Sections should produce menu sections in PDF.

6. The text should look good on both A4 and letter paper.

7. The style should be single-column for convenience of scrolling.

8. The print area should be convenient for printing using print-on-demand publishers.

9. Running heads.