

iaria

An Unofficial IARIA LaTeX Class

Christoph P. Neumann <cyberpetaneuron@gmail.com>

Version 0.5

Abstract

The `iaria`-class provides a convenient environment for writing IARIA scholarly publications. This version also implements full IARIA specifications for citation style, which can only be templated for a specific technological combination like `latex/pdflatex` in combination with `biblatex` using a `biber` backend.

1 Installation

The `zip` or `tar.gz` file comes with a `iaria.ins` and a `iaria.dtx` file included which contains the \LaTeX stuff.

To extract the class files call:

```
$ latex iaria.ins
```

This call will extract all \LaTeX specific files to the current directory. You can either use the files for a single `cv` project or you can integrate the files into your \TeX installation.

If you just want to use `iaria` for a single curriculum vitae project, the simplest way is just to copy the generated files to the folder of the project.

If you want to integrate `iaria` into your \TeX installation, create a directory `tex/latex/iaria` beneath your \TeX installation (e.g. beneath `/usr/share/texmf`) and copy all files from the current directory there. Now call:

```
$ mktexlsr
```

to update the file-cache of \LaTeX .

Hint: The `iaria` distribution contains a sample `docstrip` configuration in `docstrip.cfg` via which files can be distributed automatically to their correct positions inside a \LaTeX installation. Feel free to adapt this file to your environment and afterwards call `latex iaria.ins` to install the package to its right place.

2 Templates

For a quick start the `iaria` distribution contains document templates. The templates can be found in the `iaria-example-neumann.zip` file.

3 Documentclass

`documentclass iaria` This package provides the documentclass `iaria`. The documentclass supports the following options:

- `conference` Passed to `IEEEtran`
- `a4paper` Passed to `IEEEtran`
- `subfig` Loads `subfig` package with IARIA style settings
- `subcaption` Loads `subcaption` package with IARIA style settings
- `flushend` Activate `flushend` package (compatible with arXiv build process)
- `pbalance` Activate `pbalance` package (incompatible with arXiv build process)

A Remark about two-column document balancing on the last page: The `flushend` package is recommended, because it works within the arXiv automated build process. However, `flushend` has a major incompatibility with package `lineno`, which is, e.g., transitively loaded by package `mindflow`. Thus, in case when `flushend` does not have any effect, check whether one of your packages loads `lineno`. Usually you are stuck with your packages and, thus, will instead be forced to switch from `flushend` to `pbalance`. Please be aware that `pbalance` works great and has high compatibility, but unfortunately it will not have any effect within the arXiv automated build process. In case of both, a somehow needed `lineno` package and an intended arXiv upload, I recommend to do without two-column balancing on the last page and just to stay away from both `flushend` and `pbalance`, in order to ensure that your paper is layouted identically in IARIA submission and arXiv upload. I hope this remark proves helpful, it took me some nerve to find out.

There is also another important difference between `flushend` and `pbalance`: the handling of footnotes on the last page. `Flushend` provides a decent result, but the result of `pbalance` is incomprehensible. I strongly recommend avoiding footnotes on the last page. If you absolutely need footnotes on the last page, consider staying away from two-column balancing on the last page.

About subfigures: Both well-known packages `subfig` and `subcaption` can be used. However, they are not compatible with each other and we can either load one or the other. Both require dedicated style settings to be compatible with IARIA formatting rules. Thus, the document class provides options to load them for you with correct settings.

4 Requirements

We instrument several other L^AT_EX packages for different purposes, which must be available under your installation.

- IEEEtran
- biblatex
- extdash
- flushend
- fontenc
- graphicx
- hyperref
- inputenc
- orcidlink
- pbalance
- subcaption
- subfig
- times
- url
- xcolor
- xpatch

5 The Code

```
1 @echo off
2
3 rem *****
4 rem * author: Christoph P. Neumann
5 rem *****
6 cd /d "%~dp0"
7
8 echo == ..\examples\* ==
9 for /D %D in (..\examples\*) do (
10  echo == %D ==
11  xcopy /Y "%*.cls" "%~D"
12 )
13
14 pause
15 %# Copyright (c) 2023-2024 Christoph P. Neumann
16
```

```

17 % !TeX spellcheck = en-US
18 % LTeX: language=en-US
19 % !TeX encoding = utf8
20 % !TeX program = pdflatex
21 % !BIB program = biblatex / biber
22
23 % DISCLAIMER: Only for latex/pdflatex in combination with biblatex using a
24 % biber backend. (And neither for XeLaTeX or LuaTeX nor for bibtex or natbib.)
25 % Because to set the required bibliography configuration, the biblatex
26 % package needs to be loaded.
27 % I also need to adjust formatting of ONLINE entries, thus, I have to make
28 % some assumptions to rely on. And inputenc must be loaded before biblatex.
29 % Thus, inputenc, fontenc and biblatex with backend=biber are hard coded part
30 % of this template.
31 % I could remove these from the cls and make this part of the example.tex,
32 % but then it would be less foolproof in my opinion.
33 % I apologize for this opinionated design decision to anyone who is
34 % jeopardised by it.
35 %
36 % I also had to decide whether to hardcode required usage of IEEEtran
37 % "conference" option into my class. I decided against it.
38 % Thus, it is required to use IARIA class like this:
39 % \documentclass[conference]{iaria}.
40 % The iaria class passes all class options (like "conference") to IEEEtran.
41 % The reasoning: There might be a future use case (speculatively) to pass
42 % IEEEtran options like "a4paper", for IARIA purposes (?)
43 % For now, IARIA requires IEEE "conference" option, only.
44
45 \NeedsTeXFormat{LaTeX2e}
46
47 \ProvidesClass{iaria}[2024/10/24 unofficial IARIA conference template v0.5]
48
49 % Define marker counter for options (counter are global in latex):
50 \newcounter{iaria@subfigtracker}
51 \newcounter{iaria@subcaptiontracker}
52 \newcounter{iaria@pbalancetracker}
53 \newcounter{iaria@flushendtracker}
54
55 % Declare options:
56
57 \DeclareOption{subfig}{
58   \setcounter{iaria@subfigtracker}{1}
59   \typeout{iaria class: subfig option is set (use subfloat command).}
60 }
61 \DeclareOption{subcaption}{
62   \setcounter{iaria@subcaptiontracker}{1}
63   \typeout{iaria class: subcaption option is set (use subfigure command).}
64 }
65
66 % IEEE option onecolumn will be ignored
67 \DeclareOption{onecolumn}{\OptionNotUsed}
68
69 \DeclareOption{pbalance}{
70   \setcounter{iaria@pbalancetracker}{1}

```

```

71 \typeout{iaria class: pbalance option is set.}
72 }
73 \DeclareOption{flushend}{
74 \setcounter{iaria@flushendtracker}{1}
75 \typeout{iaria class: flushend option is set.}
76 }
77
78 % We'll pass any document class options along to the underlying class
79 % (required IEEE options: conference! For IARIA purposes.)
80 \DeclareOption*{%
81 \PassOptionsToClass{\CurrentOption}{IEEEtran}
82 }
83
84 % Now we'll execute any options passed in
85 \ProcessOptions\relax
86
87 % Instead of defining each and every little detail
88 % required to create a new document class,
89 % you can base your class on an existing document class.
90 \LoadClass{IEEEtran}
91
92 % Now paste your code from the preamble here.
93 % Replace \usepackage with \RequirePackage.
94 % (The syntax for both commands is the same.)
95
96 \RequirePackage{times} % Times New Roman
97
98 % inputenc must be loaded before biblatex
99 \RequirePackage[utf8]{inputenc}
100
101 % https://tex.stackexchange.com/questions/664/why-should-i-use-RequirePackageet1fontenc
102 % Has to be loaded AFTER any font packages.
103 % See https://tex.stackexchange.com/a/2869/9075.
104 \RequirePackage[T1]{fontenc}
105
106 \RequirePackage{graphicx}
107 \RequirePackage{xcolor}
108
109 \RequirePackage{url}
110 \RequirePackage{orcidlink}
111 \RequirePackage{hyperref}
112 \hypersetup{hidelinks,unicode}
113
114 % Diferring from IEEE, IARIA requires
115 % in bibliography: 6+ authors as first author et al.
116 % in \citeauthor: any case of et al. with just first author et al.
117 \RequirePackage[
118 defernumbers=true,
119 style=ieee,
120 backend=biber,
121 url=false,
122 hyperref,
123 maxnames=5,
124 minnames=1,

```

```

125 maxcitenames=2,
126 mincitenames=1
127 ]{biblatex}
128
129 % Due to applied option defernumbers=true:
130 % Prevent citations in the references are being numbered as '0' in ArXiv
131 % https://tex.stackexchange.com/questions/463556/all-the-citations-in-the-references-are-bein
132 \makeatletter
133 \let\blx@rerun@biber\relax
134 \makeatother
135
136 \renewcommand*{\bibfont}{\small}
137
138 % Diferring from IEEE, IARIA requires, for ONLINE entries,
139 % no point but a comma between author and title:
140 % For style=ieee
141 \DeclareBibliographyDriver{online}{%
142   \usebibmacro{bibindex}%
143   \usebibmacro{begentry}%
144   \usebibmacro{author/editor+others/translator+others}
145   \setunit{\labelnamepunct}\newblock
146   \usebibmacro{title}%
147   \newunit
148   \printlist{language}%
149   \newunit\newblock
150   \usebibmacro{byauthor}%
151   \newunit\newblock
152   \usebibmacro{byeditor+others}%
153   \newunit\newblock
154   \printfield{version}%
155   \newunit
156   \printfield{note}%
157   \newunit\newblock
158   \printlist{organization}
159   \newunit\newblock
160   \usebibmacro{date}%
161   \newunit\newblock
162   \iftoggle{bbx:eprint}
163   {\usebibmacro{eprint}}
164   {}%
165   \newunit\newblock
166   \usebibmacro{url+urldate}%
167   \newunit\newblock
168   \usebibmacro{addendum+pubstate}%
169   \setunit{\bibpagerefpunct}\newblock
170   \usebibmacro{pageref}%
171   \usebibmacro{finentry}}
172
173 \makeatletter
174 % Diferring from IEEE, IARIA requires non-abbreviated references:
175 \renewcommand{\fnum@figure}{Figure~\thefigure}
176 % Diferring from IEEE, IARIA requires 14 point bold Times for the title
177 \renewcommand{\title}[1]{\renewcommand{\@title}{\bfseries\Large #1}}
178 % Diferring from IEEE, IARIA requires "Keywords" instead of "Index Terms":

```

```

179 \renewcommand\IEEEkeywordsname{Keywords}
180 \makeatother
181
182 \RequirePackage{xpatch}
183 % Diferring from IEEE, IARIA requires a hyphen after "Keywords"
184 % instead of an emdash:
185 \xpatchcmd\IEEEkeywords{---}{-}{-}{}
186
187 % Diferring from IEEE, IARIA requires also the keywords in Italic
188 % (and Bold)(and lower case!):
189 \let\oldIEEEkeywords\IEEEkeywords
190 \def\IEEEkeywords{\oldIEEEkeywords\itshape\ignorespaces}
191
192 \makeatletter
193 \renewcommand{\IEEEauthorblockN}[1]{%
194 % copied from IEEEtran.cls:
195     \relax\@IEEEauthorblockNstyle% set the default text style
196     \gdef\@IEEEauthorblockXinterlinespace{0pt}% disable strut for spacer row
197     \if@IEEEprevauthorblockincol\expandafter\@IEEEauthorblockNtopspaceline\fi
198     \global\@IEEEprevauthorblockincoltrue% we now have a block in this column
199     \gdef\@IEEEauthorblockXinterlinespace{\@IEEEauthorblockNinterlinespace}%
200     \large
201     #1%
202     \crrc}
203 \makeatother
204
205 % IARIA requires to bring the table caption in the same line of "Table I"
206 \usepackage{etoolbox}
207 \makeatletter
208 \patchcmd{\@makecaption}
209     {\}
210     {. \ }
211     {}
212     {}
213 \makeatother
214
215 % IARIA subfigure captions require parentheses and footnotesize:
216 \ifnum\value{iarial@subfigtracker}=1
217     \typeout{iarial class: load subfig package (use subfloat command).}
218     \RequirePackage[caption=false,font=footnotesize]{subfig}
219 \fi
220 \ifnum\value{iarial@subcaptiontracker}=1
221     \typeout{iarial class: load subcaption package (use subfigure command).}
222     \RequirePackage{subcaption}
223     \captionsetup[subfigure]{labelformat=parens,font=footnotesize}
224 \fi
225
226 % Balance/level columns at the last page / in bibliography
227 % DISCLAIMER: No solution is a 100%/perfect one!
228 % Mainstream option: pbalance (see https://ctan.org/pkg/pbalance)
229 % BUT: incompatible with arxiv automated process (!)
230 \ifnum\value{iarial@pbalancetracker}=1
231     \typeout{iarial class: load pbalance package.}
232     \RequirePackage{pbalance}

```

```

233 \fi
234 % Flushend => works with arxiv, but major incompatibility with lineno
235 % (and, thus, also with mindflow et al.)
236 \ifnum\value{iaria@flushendtracker}=1
237 \typeout{iaria class: load flushend package.}
238 \RequirePackage{flushend}
239 \fi
240
241 % =====
242 % Packages with recommendation to load them last:
243
244 % Allows to hyphenate a word that contains a dash:
245 % https://stackoverflow.com/questions/2193307/how-do-i-get-latex-to-hyphenate-a-word-that-con
246 % Use \-/ for a breakable dash that does not prevent the
247 % remainder of the word to be hyphenated.
248 \RequirePackage[shortcuts]{extdash}
249 % =====
250
251 % Finally, we'll use \endinput to indicate that LaTeX can stop reading
252 % this file. LaTeX will ignore anything after this line.
253 \endinput

```