iaria
An Unofficial IARIA LaTeX Class

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Version 0.4

Abstract

The `iaria`–class provides a convenient environment for writing IARIA scholary 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 incampatibility 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 LaTeX 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 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 biber backend.
24 %# (And neither for XeLaTeX or LuaTeX nor for bibtex or natbib.)
25 %# Because to set the required bibliography configuration, the biblatex package needs to be l
26 %# I also need to adjust formatting of ONLINE entries, thus, I have to make some assumptions
27 %# And inputenc must be loaded before biblatex.
28 %# Thus, inputenc, fontenc and biblatex with backend=biber are hard coded part of this templa
29 %# I could remove these from the cls and make this part of the example.tex, but then it would
30 %# I apologize for this opinionated design decission to anyone who is jeopardised by it.
31 %#
32 %# I also had to decide whether to hardcode required usage of IEEEtran "conference" option in
33 %# I decided against it.
34 %# Thus, it is required to use IARIA class like this: \documentclass[conference]{iaria}.
35 %# The iaria class passes all class options (like "conference") to IEEEtran.
36 %# The reasoning: There might be a future use case (speculatively) to pass IEEEtran options l
37 %# For now, IARIA requires IEEE "conference" option, only.
38
39 % Declare that this document class file requires at least LaTeX version 2e.
40 \NeedsTeXFormat{LaTeX2e}
41
42 % Provide the name of your document class, the date it was last updated, and a comment about
43 \ProvidesClass{iaria}[2024/09/16 unofficial IARIA conference template v0.4]
44
45 % Define marker counter for options (counter are global in latex):
46 \newcounter{iaria@subfigtracker}
47 \newcounter{iaria@subcaptiontracker}
48 \newcounter{iaria@pbalancetracker}
49 \newcounter{iaria@flushendtracker}
50
51 % Declare options:
52
53 \DeclareOption{subfig}{
54   \setcounter{iaria@subfigtracker}{1}
55   \typeout{iaria class: subfig option is set (use subfloat command).}
56 }
57 \DeclareOption{subcaption}{
58   \setcounter{iaria@subcaptiontracker}{1}
59   \typeout{iaria class: subcaption option is set (use subfigure command).}
60 }
61
62 \DeclareOption{onecolumn}{\OptionNotUsed} % IEEE option onecolumn will be ignored
63
64 \DeclareOption{pbalance}{
65   \setcounter{iaria@pbalancetracker}{1}
66   \typeout{iaria class: pbalance option is set.}
67 }
68 \DeclareOption{flushend}{
69   \setcounter{iaria@flushendtracker}{1}
70   \typeout{iaria class: flushend option is set.}
```

```latex
71 }
72
73 % We'll pass any document class options along to the underlying class
74 \DeclareOption*{%
75   \PassOptionsToClass{\CurrentOption}{IEEEtran}% required IEEE options: conference (for IARIA
76 }
77
78 % Now we'll execute any options passed in
79 \ProcessOptions\relax
80
81 % Instead of defining each and every little detail required to create a new document class,
82 % you can base your class on an existing document class.
83 \LoadClass{IEEEtran}
84
85 % Now paste your code from the preamble here.
86 % Replace \usepackage with \RequirePackage. (The syntax for both commands is the same.)
87
88 \RequirePackage{times} % Times New Roman
89
90 % inputenc must be loaded before biblatex
91 \RequirePackage[utf8]{inputenc}
92
93 % https://tex.stackexchange.com/questions/664/why-should-i-use-RequirePackaget1fontenc
94 % Has to be loaded AFTER any font packages. See https://tex.stackexchange.com/a/2869/9075.
95 \RequirePackage[T1]{fontenc}
96
97 \RequirePackage{graphicx}
98 \RequirePackage{xcolor}
99
100 \RequirePackage{url}
101 \RequirePackage{orcidlink}
102 \RequirePackage{hyperref}
103 \hypersetup{hidelinks,unicode}
104
105 % Diferring from IEEE, IARIA requires
106 % in bibliography: 6+ authors as first author et al.
107 % in \citeauthor: any case of et al. with just first author et al.
108 \RequirePackage[defernumbers=true,style=ieee, backend=biber, url=false, hyperref, maxnames=5,
109
110 % Due to applied option defernumbers=true:
111 % Prevent citations in the references are being numbered as '0' in ArXiv
112 % https://tex.stackexchange.com/questions/463556/all-the-citations-in-the-references-are-bein
113 \makeatletter
114 \let\blx@rerun@biber\relax
115 \makeatother
116
117 \renewcommand*{\bibfont}{\small}
118
119 % Diferring from IEEE, IARIA requires, for ONLINE entries, no  point but a comma between auth
120 % For style=ieee
121 \DeclareBibliographyDriver{online}{%
122     \usebibmacro{bibindex}%
123     \usebibmacro{begentry}%
124     \usebibmacro{author/editor+others/translator+others}
```

```latex
125      \setunit{\labelnamepunct}\newblock
126      \usebibmacro{title}%
127      \newunit
128      \printlist{language}%
129      \newunit\newblock
130      \usebibmacro{byauthor}%
131      \newunit\newblock
132      \usebibmacro{byeditor+others}%
133      \newunit\newblock
134      \printfield{version}%
135      \newunit
136      \printfield{note}%
137      \newunit\newblock
138      \printlist{organization}
139      \newunit\newblock
140      \usebibmacro{date}%
141      \newunit\newblock
142      \iftoggle{bbx:eprint}
143      {\usebibmacro{eprint}}
144      {}%
145      \newunit\newblock
146      \usebibmacro{url+urldate}%
147      \newunit\newblock
148      \usebibmacro{addendum+pubstate}%
149      \setunit{\bibpagerefpunct}\newblock
150      \usebibmacro{pageref}%
151      \usebibmacro{finentry}}
152
153 \makeatletter
154 % Diferring from IEEE, IARIA requires non-abbreviated references:
155 \renewcommand{\fnum@figure}{Figure~\thefigure}
156 % Diferring from IEEE, IARIA requires 14 point bold Times New Roman for the title
157 \renewcommand{\title}[1]{\renewcommand{\@title}{\bfseries\Large #1}}
158 % Diferring from IEEE, IARIA requires "Keywords" instead of "Index Terms":
159 \renewcommand\IEEEkeywordsname{Keywords}
160 \makeatother
161
162 \RequirePackage{xpatch}
163 % Diferring from IEEE, IARIA requires a hyphen after "Keywords" instead of an  emdash:
164 \xpatchcmd\IEEEkeywords{---}{-}{}{}
165
166 % Diferring from IEEE, IARIA requires also the keywords in Italic (and Bold)(and lower case!)
167 \let\oldIEEEkeywords\IEEEkeywords
168 \def\IEEEkeywords{\oldIEEEkeywords\itshape\ignorespaces}
169
170 \makeatletter
171 \renewcommand{\IEEEauthorblockN}[1]{%
172 % copied from IEEEtran.cls:
173      \relax\@IEEEauthorblockNstyle% set the default text style
174      \gdef\@IEEEauthorblockXinterlinespace{0pt}% disable strut for spacer row
175      % the \expandafter hides the \cr in conditional tex, see the array.sty docs
176      % for details, probably not needed here as the \cr is in a macro
177      % do a spacer row if needed
178      \if@IEEEprevauthorblockincol\expandafter\@IEEEauthorblockNtopspaceline\fi
```

```
179     \global\@IEEEprevauthorblockincoltrue% we now have a block in this column
180     %restore the correct strut value
181     \gdef\@IEEEauthorblockXinterlinespace{\@IEEEauthorblockNinterlinespace}%
182     % input the author names
183     \large
184     #1%
185     % end the row if the user did not already
186     \crcr}
187 \makeatother
188
189 % IARIA requires to bring the table caption in the same line of "Table I"
190 \usepackage{etoolbox}
191 \makeatletter
192 \patchcmd{\@makecaption}
193   {\\}
194   {.\ }
195   {}
196   {}
197 \makeatother
198
199 % IARIA subfigure captions require parentheses and footnotesize:
200 \ifnum\value{iaria@subfigtracker}=1
201   \typeout{iaria class: load subfig package (use subfloat command).}
202   \RequirePackage[caption=false,font=footnotesize]{subfig}
203 \fi
204 \ifnum\value{iaria@subcaptiontracker}=1
205   \typeout{iaria class: load subcaption package (use subfigure command).}
206   \RequirePackage{subcaption}
207   \captionsetup[subfigure]{labelformat=parens,font=footnotesize}
208 \fi
209
210 % Balance/level columns at the last page / in bibliography
211 % DISCLAIMER: No solution is a 100%/perfect one!
212 % Mainstream option: pbalance (see https://ctan.org/pkg/pbalance)
213 % BUT: incompatible with arxiv automated process (!)
214 \ifnum\value{iaria@pbalancetracker}=1
215   \typeout{iaria class: load pbalance package.}
216   \RequirePackage{pbalance}
217 \fi
218 % Flushend => works with arxiv, but major incampatibility with lineno (and, thus, also with n
219 \ifnum\value{iaria@flushendtracker}=1
220   \typeout{iaria class: load flushend package.}
221   \RequirePackage{flushend}
222 \fi
223
224 % =========================================================
225 % Packages with recommendation to load them last:
226
227 % Allows to hyphenate a word that contains a dash:
228 % https://stackoverflow.com/questions/2193307/how-do-i-get-latex-to-hyphenate-a-word-that-cor
229 \RequirePackage[shortcuts]{extdash} % Use \-/ for a breakable dash that does not prevent the
230 % =========================================================
231
232 % Finally, we'll use \endinput to indicate that LaTeX can stop reading this file. LaTeX will
```

233 \endinput