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1 Introduction

The jmlr class is for articles that need to be formatted according to the Journal of Machine Learning Research style. This class is based on the jmlr2e and jmlrwcp2e packages but has been adapted to enable it to work better with the combine class to collate the articles into a book. Section 2 describes how to use the jmlr class. Note that JMLR W&CP (JMLR: Workshop and Conference Proceedings) has been renamed PMLR (Proceedings of Machine Learning Research). Articles for new proceedings should use the pmlr class option.

The jmlrbook class is for combining articles that use the jmlr class into a book. The jmlrbook class uses combine and hyperref, which are troublesome enough on their own but together are quite fragile. The jmlrbook class redefines some internals to get combine and hyperref to work together but some packages (e.g. subfig and pdfpages) are likely to mess everything up and cause errors. This is why the guidelines to authors are fairly stringent and why the jmlr class will give an error message if certain packages are loaded.¹ The jmlrbook class works best with PDFLaTeX so authors should ensure that their articles can compile with PDFLaTeX. Section 3 describes how to use the jmlrbook class.

As from v1.24, some non-class dependent commands and environments have been moved to a new package jmlrutils (see Section 2.5). This package is automatically loaded by jmlr, but may be used with other classes. (Note that you will need to explicitly load algorithm2e if you want to use the algorithm environment.)

Note that the jmlr (and therefore jmlrbook) class automatically loads the hyperref package, but some packages need to be loaded before hyperref.

There is a Java application called makejmlrbookgui that can compile all the individual papers from the book and generate the bib file for the proceedings (according to the PMLR specifications). It can also create a grey nonhyperlinked PDF/X compliant print version of

¹Currently jmlr will check if subfig, pdfpages, geometry, psfig, epsfig, theorem, tabularx, amsthm and ntheorem are loaded and will throw an error. If other packages are found to be a problem, they will be added to the list.
the book. The application can be downloaded from http://www.dickimaw-books.com/software/makejmlrbookgui/ where there is also a troubleshooting section.

There is also a Perl script called makejmlrbook, which is distributed with the jmlr and jmlrbook bundle, however it is now deprecated and has been superseded by makejmlrbookgui. Note that PMLR (formerly JMLR W&CP) has new format guidelines that are followed by new versions of makejmlrbookgui but not by the Perl script makejmlrbook, so that script is no longer documented or supported and may be dropped from future versions of this bundle.

1.1 Required Packages

The jmlr class is based on the article class and loads the following packages: jmlrutils (see Section 2.5), amsmath, amssymb, natbib, url, graphicx and algorithm2e, hyperref, nameref, xcolor and xkeyval. Note that unlike the jmlr2e and jmlrwcp2e packages, this class file does not load the obsolete epsfig package.

The jmlrbook class additionally loads the combine class and the following packages: combinat, setspace and fink.

The makejmlrbookgui application requires Java and \text{T}_{\text{X}}. (GhostScript is also required for the print-ready version of the book.)
2 Guidelines for Article Authors

Article authors should use the jmlr class. This class comes with example files jmlr-sample.tex and jmlrwcp-sample.tex, which can be used as templates.

The following class options are available:

nowcp  The article is for the Journal of Machine Learning Research (default).

pmlr  The article is for the Proceedings of Machine Learning Research (PMLR).

wcp  The article is for JMLR Workshop and Conference Proceedings (JMLR W&CP).

twocolumn  Use two-column style. The title and author information will span both columns through the use of the optional argument of \twocolumn. This means that no page break can occur in the title and author list.

onecolumn  Use one-column style (default).

color  Color version (see Section 2.6).

gray  Grayscale version (see Section 2.6).

\tablecaption=top  in a table environment, \floatconts puts the caption at the top.

\tablecaption=bottom  in a table environment, \floatconts puts the caption at the bottom.

2.1 Title Information

The jmlr class uses different syntax from jmlr2e and jmlrwcp2e to specify the title information. In particular, it doesn't define \jmlrheading and \ShortHeading. Instead, the following commands should be used:

\jmlrvolume\{\langle number\rangle\}

This specifies the volume number. For example:

\jmlrvolume\{2\}

\jmlryear\{\langle year\rangle\}

This specifies the year. For example:

\jmlryear\{2010\}
<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>\jmlrsubmitted</td>
<td>Specifies the submission date.</td>
</tr>
<tr>
<td>\jmlrpublished</td>
<td>Specifies the publication date.</td>
</tr>
<tr>
<td>\jmlrworkshop</td>
<td>Specifies the workshop title (for use with the \wcp class option).</td>
</tr>
<tr>
<td>\maketitle</td>
<td>This command should go after \begin{document}. For example:</td>
</tr>
<tr>
<td>\editor</td>
<td>Specifies the editor’s name. If there is more than one editor, use:</td>
</tr>
</tbody>
</table>

The title information is specified using the commands described below. These commands should typically go in the preamble. As with most class files, the title itself is produced using \maketitle. This command should go after \begin{document}. For example:

\begin{document}
\maketitle

Before \maketitle, you must specify the title information using the following commands:

- **\title**\[\langle short title\rangle\]{\langle title\rangle}
  
  This specifies the article’s title. A short title for the page header can be supplied via the optional argument (short title). If you want to force a line break in the title, use instead of \newline or \ as this will ensure that the line break doesn’t also end up in the table of contents or bookmarks when the article is included in a book. If there is content within the title that should not appear in the page headings or table of contents (for example, a footnote) use

- **\titlebreak**
  
  For example:

  \title{An Interesting Paper}\titlebreak
  With a Line Break\titletag{\thanks{and an acknowledgement}}

- **\titletag**\{\langle title only stuff\rangle\}
  
  For example:

  \title{An Interesting Paper}\titlebreak
  With a Line Break\titletag{\thanks{and an acknowledgement}}

- **\editor**\{\langle name\rangle\}
  
  This specifies the editor’s name. If there is more than one editor, use:
This specifies the author. The specifications \textit{(author specs)} are a bit different to jmlr2e and jmlrwcp2e. Use

\begin{verbatim}
\Name{\textit{(abbreviated name)}}\textit{(author’s name)}
\end{verbatim}

to specify the author’s name. Note that if the surname contains a space it must be grouped (enclosed in braces \{\}). Similarly if the initial letter of each forename is a diacritic it must be grouped. If the abbreviation of the name doesn’t get parsed properly you can override the default using the optional argument. (See below for examples.)

If there is any content within \textit{(author’s name)} that shouldn’t get copied to the header, footer or table of contents, it should be enclosed within the argument of

\begin{verbatim}
\nametag{\textit{(title only stuff)}}
\end{verbatim}

For example:

\begin{verbatim}
\Name{Ann Other}\nametag{\textit{thanks(formerly with some other institute)}}
\end{verbatim}

\begin{verbatim}
\Email{\textit{(author’s email)}}
\end{verbatim}

This specifies the author’s email address. It should only be used within the argument to \texttt{\author}.

\begin{verbatim}
\and
\end{verbatim}

This should be used to separate two authors with the same address.

\begin{verbatim}
\AND
\end{verbatim}

This should be used to separate authors with different addresses.

\begin{verbatim}
\end{verbatim}

This should be used before an author’s address or between authors with the same address where there are more that two authors.

\begin{verbatim}
\addr
\end{verbatim}

This should be used at the start of the address.
Example 1  Two authors with the same address:

\author{\Name{Jane Doe} \Email{abc@sample.com}\and
\Name{John {Basey Fisher}} \Email{xyz@sample.com}\}
\addr Address

In this example, the second author has a space in his surname so the surname needs to be grouped.

Example 2  Three authors with the same address:

\author{\Name{Fred Arnold {de la Cour}} \Email{an1@sample.com}\\Name{Jack Jones} \Email{an3@sample.com}\\Name{\'E}louise {\'E}abhla Finchley} \Email{an2@sample.com}\\addr Address

In this example, the third author has an accent on her forename initials so grouping is required.

Example 3  Authors with a different address:

\author{\Name{John Smith} \Email{abc@sample.com}\\addr Address 1\AND\Name{May Brown} \Email{xyz@sample.com}\}\addr Address 2

Example 4  The author is actually a company so there's no first name and surname:

\author{\Name[Some Company, Ltd]{Some Company, Ltd}\Email{xyz:some.com}\}\addr Address

2.2 Font Changing Commands

Use the \textbf{\LaTeX} font changing commands, such as \textbf{\texttt{\textbf{\langle text\rangle}}}, rather than the obsolete \texttt{\LaTeX2.09} commands, such as \texttt{bf}. (The obsolete font changing commands will produce a warning if used.)

\url{\langle address\rangle}

This will typeset \langle address\rangle in a typewriter font. Special characters, such as ~, are correctly displayed. Example:

\url{http://theoval.cmp.uea.ac.uk/~nlct/}
This command is provided by the \url package which is automatically loaded.

\mailto{\{email address\}}

This will typeset the given email address in a typewriter font. Note that this is not the same as \Email, which should only be used in the argument of \author. This command is provided by the supplementary package jmlrutils. Other commands are described in Section 2.5.

### 2.3 Structure

\begin{abstract}
\{text\}
\end{abstract}

The abstract text should be displayed using the \abstract environment.

\begin{keywords}
\{keyword list\}
\end{keywords}

The keywords should be displayed using the \keywords environment.

\acks{\{text\}}

This displays the acknowledgements.

\section{\{title\}}

Section titles are created using \section. The heading is automatically numbered and can be cross-referenced using \label and \ref. Unnumbered sections can be produced using:

\section*{\{title\}}

\subsection{\{title\}}

Sub-section titles are created using \subsection. Unnumbered sub-sections can be produced using:

\subsection*{\{title\}}

\subsubsection{\{title\}}

Sub-sub-section titles are created using \subsubsection. Unnumbered sub-sub-sections can be produced using:
Further sectioning levels can be obtained using \paragraph and \subparagraph, but these are unnumbered with running heads.

Use \appendix to switch to the appendices. This changes \section to produce an appendix. Example:

\appendix
\chapter{Proof of Theorems}

\section{Citations and Bibliography}

The jmlr class automatically loads natbib and sets the bibliography style to plainnat. References should be stored in a .bib file.

\bibliography{(bib file)}

This displays the bibliography.

\citep[(pre note)]{(post note)}{(label)}

Use \citep for a parenthetical citation.

\citet{(note)}{(label)}

Use \citet for a textual citation.

See the natbib documentation\footnote{http://ctan.org/pkg/natbib} for further details.

\section{jmlrutils supplementary package}

The jmlrutils package is automatically loaded by the jmlr class but may be used with other classes.

\subsection{Package Options}

The following options may be passed to the jmlrutils package if it is to be used without the jmlr class.

\texttt{maths} Define the commands \set and \oldvec and redefine \vec. This will also automatically load the amsmath package. (Default.)
nomaths  Don't define \set and \oldvec and don't redefine \vec.

theorems  Define the theorem commands and environments listed in Section 2.5.5. (Default.)

notheorems  Don't define the theorem commands and environments.

subfloats  Define the sub-figure and sub-table commands listed in Section 2.5.2. (Default.)

nosubfloats  Don't define the sub-figure and sub-table commands.

The non-default options are provided when jmlrutils is loaded without the jmlr class. Don't try passing the non-default options to jmlrutils if you are using the jmlr class as this could interfere with the build process for the proceedings or book.

The jmlrutils package doesn't recognise any of the jmlr class options (such as tablecaption).

2.5.2 Figures and Tables

Floats, such as figures, tables and algorithms, are moving objects and are supposed to float to the nearest convenient location. Please don't force them to go in a particular place. In general it's best to use the htbp specifier and don't put the float in the middle of a paragraph (that is, make sure there's a paragraph break above and below the float). Floats are supposed to have a little extra space above and below them to make them stand out from the rest of the text. This extra space is put in automatically and shouldn't need modifying.

To ensure consistency, please don't try changing the format of the caption by doing something like:

\caption{\textit{A Sample Caption.}}

or

\caption{\em A Sample Caption.}

You can, of course, change the font for individual words or phrases. For example:

\caption{A Sample Caption With Some \emph{Emphasized Words}.}

The jmlrutils package provides the following command for displaying the contents of a figure or table:

\begin{verbatim}
\floatconts{\llabel}{\caption command}{\contents}
\end{verbatim}

This ensures that the caption is correctly positioned and that the contents are centred. For example:

\begin{table}[htbp]
\floatconts{tab:example}{An Example Table}{
\begin{tabular}{ll}
\hline
A & B \\
\hline
1 & 2 \\
\hline
\end{tabular}
}
\end{table}
If the \texttt{jmlr} class is used, the table caption (when used with \texttt{\floatconts}) will obey the table-caption class option, otherwise it will be placed above the table contents. Within the figure environment, \texttt{\floatconts} will put the caption below the contents. This command may be used within other floats.

The \texttt{jmlr} class automatically loads \texttt{graphicx} which defines:

\begin{verbatim}
\includegraphics[\langle options\rangle]{\langle file name\rangle}
\end{verbatim}

where \texttt{\langle options\rangle} is a comma-separated list of options. If you are using \texttt{jmlrutil} with another class you need to load \texttt{graphicx} in order to use this command. See the documentation for the \texttt{graphicx} package for further details of this command and other provided commands.

For example, suppose you have an image called \texttt{mypic.png} in a subdirectory called images:

\begin{verbatim}
\begin{figure}[htbp]
\floatconts
  \{fig:example\}% label
  \{\caption{An Example Figure}\}% caption command
  \{\includegraphics[width=0.5\textwidth]{images/mypic}\}
\end{figure}
\end{verbatim}

Note that you shouldn’t specify the file extension when including the image when using the \texttt{jmlr} class. It’s helpful if you can also provide a grayscale version of colour images. This should be labelled as the colour image but with \texttt{-gray} immediately before the extension. (The extension need not be the same as that of the colour image.) For example, if you have an image called \texttt{mypic.pdf}, the grayscale can be called \texttt{mypic-gray.pdf}, \texttt{mypic-gray.png} or \texttt{mypic-gray.jpg}. See Section 2.6 for further details.

\begin{verbatim}
\includegraphicsimage[\langle options\rangle]{\langle file name\rangle}
\end{verbatim}

If your image file is made up of \LaTeX\ code (e.g.\texttt{tikz} commands) the file can be included using \texttt{\includegraphicsimage}. The optional argument is a key=value comma-separated list where the available keys are a subset of those provided by \texttt{graphicx}'s \texttt{\includegraphics}. The main keys are: \texttt{width}, \texttt{height}, \texttt{scale} and \texttt{angle}. Some of the keys specific to image files (such as the bounding box and type keys) do nothing with \texttt{\includegraphicsimage}.

\textbf{Sub-Figures and Sub-Tables}

The subfig package causes a problem for \texttt{jmlrbook} so the \texttt{jmlr} class will give an error if it is used. Therefore the \texttt{jmlr} class provides its own commands for including sub-figures and sub-
tables. If you aren’t using the \texttt{jmlr} class, you can prevent \texttt{jmlrutils} from defining these commands with the \texttt{nosubfloats} package option.

\begin{figure}
\footnotesize
\centering
\begin{tabular}{|c|c|}
\hline
\textbf{Table 1} & \textbf{Table 2} \\
\hline
1 & 2 \\
3 & 4 \\
\hline
\end{tabular}
\caption{Example table}
\label{tab:example}
\end{figure}

\begin{algorithm}
\begin{algorithmic}
\State \textbf{Procedure} \texttt{Example}
\State \textbf{Input} \texttt{x}
\State \textbf{Output} \texttt{y}
\State \texttt{y} = \texttt{x}^2
\end{algorithmic}
\end{algorithm}

\subsection{2.5.3 Algorithms}

The \texttt{jmlr} class automatically loads the \texttt{algorithm2e} package. If you are using \texttt{jmlrutils} with another class, you will need to load \texttt{algorithm2e} if you want to use the \texttt{algorithm} and \texttt{algorithm2e} environments described below.

\begin{algorithm}
\begin{algorithmic}
\State \textbf{Procedure} \texttt{Example}
\State \textbf{Input} \texttt{x}
\State \textbf{Output} \texttt{y}
\State \texttt{y} = \texttt{x}^2
\end{algorithmic}
\end{algorithm}

Enumerated textual algorithms can be displayed using the \texttt{algorithm} environment. The optional argument is as for figure and table. Within the body of the environment you can use the enumerate environment.
enumerate*

\begin{enumerate*}
  \item \text{...}
\end{enumerate*}

If you want to have nested enumerate environments but you want to keep the same numbering throughout the algorithm, you can use the enumerate* environment, provided by the jmlrutils package. For example:

\begin{algorithm}
\floatconts{alg:path}{\caption{Shortest Path}}{%
% contents
  \begin{enumerate*}
    \item Set the label of vertex $s$ to 0
    \item Set $i=0$
    \begin{enumerate*}
      \item \label{step:locate}Locate all unlabelled vertices adjacent to a vertex labelled $i$ and label them $i+1$
      \item If vertex $t$ has been labelled, \begin{enumerate*}
        \item the shortest path can be found by backtracking, and the length is given by the label of $t$.
      \end{enumerate*}
      \end{enumerate*}
    \end{enumerate*}
  \end{enumerate*}
}\end{algorithm}

algorithm2e

\begin{algorithm2e}
\caption{Computing Net Activation}
\label{alg:net}
\DontPrintSemicolon
\LinesNumbered
\KwIn{$x_1, \ldots, x_n, w_1, \ldots, w_n$}
\KwOut{$y$, the net activation}
$y \leftarrow 0$;
\end{algorithm2e}

Pseudo code can be displayed using the algorithm2e environment, provided by the algorithm2e package, which is automatically loaded. For example:

\begin{algorithm2e}
\caption{Computing Net Activation}
\label{alg:net}
\DontPrintSemicolon
\LinesNumbered
\KwIn{$x_1, \ldots, x_n, w_1, \ldots, w_n$}
\KwOut{$y$, the net activation}
$y \leftarrow 0$;
\end{algorithm2e}
\For{$i \leftarrow 1 \text{ to } n$}
\State $y \leftarrow y + w_i \times x_i$
\End{algorithm2e}

See the \texttt{algorithm2e} documentation\textsuperscript{2} for more details.

\subsection*{2.5.4 Description Lists}

\begin{altdescription}{\texttt{widest label}}
\item[\texttt{label}] \texttt{item text}
\end{altdescription}

In addition to the standard \texttt{description} environment, the \texttt{jmlr} class also provides the \texttt{altdescription} environment. This has an argument that should be the widest label used in the list. For example:

\begin{altdescription}{\texttt{differentiate}}
\item[\texttt{add}] A method that adds two variables.
\item[\texttt{differentiate}] A method that differentiates a function.
\end{altdescription}

\subsection*{2.5.5 Theorems, Lemmas etc}

The \texttt{jmlrbook} class doesn't work well with common theorem packages, so \texttt{jmlrutils} provides theorem code that won't conflict with \texttt{jmlrbook}. If you're using \texttt{jmlrutils} without the \texttt{jmlr} class, you can prevent the definition of these commands with the \texttt{notheorems} package option.

The \texttt{jmlrutils} package provides the following theorem-like environments: \texttt{theorem}, \texttt{example}, \texttt{lemma}, \texttt{proposition}, \texttt{remark}, \texttt{corollary}, \texttt{definition}, \texttt{conjecture} and \texttt{axiom}. Within the body of those environments, you can use the \texttt{proof} environment to display the proof if need be. The theorem-like environments all take an optional argument, which gives the environment a title. For example:

\begin{theorem}[An Example Theorem]
\label{thm:example}
This is the theorem.
\begin{proof}
This is the proof.
\end{proof}
\end{theorem}

You can define your own numbered theorem-like environment using:

\begin{Verbatim}
\newtheorem{\langle name\rangle}{\langle title\rangle}[\langle outer counter\rangle]
\end{Verbatim}

\textsuperscript{2}http://ctan.org/pkg/algorithm2e
or you can define an unnumbered theorem-like environment using:

\newtheorem*{〈name〉}{〈title〉}

where 〈name〉 is the name of the new environment and 〈title〉 is the title tag at the start of the environment. In the case of the numbered theorems, 〈counter〉 is a predefined counter to use with this theorem. If omitted, a new counter called 〈name〉 will be defined. The final optional argument 〈outer counter〉 is the name of a parent counter which, when incremented, should reset the theorem counter.

Both \newtheorem and \newtheorem* set the new theorem's style to the current defined style. The current style is set using the following commands:

\theorembodyfont{〈declarations〉}

This sets the font declarations used in the body of the theorem. This defaults to \itshape.

\theoremheaderfont{〈declarations〉}

This sets the font declarations used for the theorem title. This defaults to \bfseries.

\theorempostheader{〈text〉}

This indicates what should occur at the end of the title. This defaults to nothing.

\theoremsep{〈text〉}

This indicates what to put between the header and the body of the environment. This defaults to nothing.

For example, to define an unnumbered theorem-like environment called “note” with the title “Note” followed by a colon and a new line between the title and the body of the note environment:

\theorembodyfont{\upshape}
\theoremheaderfont{\scshape}
\theorempostheader{:}
\theoremsep{\newline}
\newtheorem*{note}{Note}

Now it can be used in the document environment:

\begin{note}
This is an numbered theorem-like environment.
\end{note}

2.5.6 Cross-Referencing

Always use \label when cross-referencing, rather than writing the number explicitly. The jmlrutils package provides some convenience commands to assist referencing. These com-

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mands, described below, can all take a comma-separated list of labels.

\sectionref \sectionref{\{label list\}}

Used to refer to a section or sections. For example, if you defined a section as follows:
\chapter{Results} \label{sec:results}
you can refer to it as follows:
The results are detailed in \sectionref{sec:results}.
This command may also be used for sub-sections and sub-sub-sections.

\appendixref \appendixref{\{label list\}}

Used to refer to an appendix or multiple appendices.

\equationref \equationref{\{label list\}}

Used to refer to an equation or multiple equations.

\tableref \tableref{\{label list\}}

Used to refer to a table or multiple tables. This can also be used for sub-tables where the main table number is also required.

\subtabref \subtabref{\{label list\}}

Used to refer to sub-tables without the main table number, e.g. (a) or (b).

\figureref \figureref{\{label list\}}

Used to refer to a figure or multiple figures. This can also be used for sub-figures where the main figure number is also required, e.g. 2(a) or 4(b).

\subfigref \subfigref{\{label list\}}

Used to refer to sub-figures without the main figure number, e.g. (a) or (b).

\algorithmref \algorithmref{\{label list\}}

Used to refer to an algorithm or multiple algorithms.

\theoremref \theoremref{\{label list\}}

Used to refer to a theorem or multiple theorems.
2.5.7 Mathematics

The \textit{jmlr} class loads the \texttt{amsmath} package so you can use any of the commands and environments defined in that package. The \texttt{jmlrutils} package will load \texttt{amsmath} if the default \texttt{maths} package option is used but won't load \texttt{amsmath} if the \texttt{nomaths} option is used. A brief summary of some of the more common commands and environments is provided here. See the \texttt{amsmath} documentation\footnote{http://ctan.org/pkg/amsmath} for further details.

\texttt{\set{\texttt{(maths)}}}

In addition to the commands provided by \texttt{amsmath}, the \texttt{jmlrutils} package also provides the \texttt{\set} command which can be used to typeset a set. For example:

The universal set is denoted \$\set{U}\$

This command won't be provided if the \texttt{nomaths} option is used.
The \textbf{\textbackslash vec} command is redefined by \texttt{jmrlutils} to use \texttt{\textbackslash boldsymbol}, which is provided by \texttt{amsmath}. (This command won't be redefined if the \texttt{nomaths} option is used.) If you require the original \textbf{\textbackslash vec}, you can access it with:

\texttt{\textbackslash orgvec}

This command won't be provided if the \texttt{nomaths} option is used.

Unnumbered single-line equations should be displayed using \texttt{\[} and \texttt{\]} . For example:

\texttt{\[E = m \ c^2\]}

Numbered single-line equations should be displayed using the equation environment. For example:

\begin{equation}
\cos^2\theta + \sin^2\theta \equiv 1
\end{equation}

The above are provided by the \texttt{\LaTeX} kernel but may be adjusted by packages such as \texttt{amsmath}. The commands and environments below are provided by \texttt{amsmath}.

Multi-lined numbered equations should be displayed using the align environment. For example:

\begin{align}
f(x) &= x^2 + x & \text{(eq:f)} \\
f'(x) &= 2x + 1 & \text{(eq:df)}
\end{align}

Unnumbered multi-lined equations should be displayed using the align* environment. For example:

\begin{align*}
f(x) &= (x+1)(x-1) \\
&= x^2 - 1
\end{align*}

If you want to mix numbered with unnumbered lines use the align environment and suppress unwanted line numbers with \texttt{\nonumber}. For example:

\begin{align}
y &= x^2 + 3x - 2x + 1 \nonumber \\
&= x^2 + x + 1 & \text{(eq:y)}
\end{align}

An equation that is too long to fit on a single line can be displayed using the split environment.

Text can be embedded in an equation using \texttt{\texttt{\textbackslash text} (text)} or you can use \texttt{\\texttt{\textbackslash intertext} (text)} to interrupt a multi-line environment such as align.
Predefined operator names are listed in table 2.1. For additional operators, either use 
\[ \operatorname{\langle name\rangle} \]
for example
If \$X\$ and \$Y\$ are independent,
\[
\operatorname{var}(X+Y) = \operatorname{var}(X) + \operatorname{var}(Y)
\]
or declare it with
\[ \DeclareMathOperator{\langle command\rangle}{\langle name\rangle} \]
for example
\[ \DeclareMathOperator{\var}{var} \]
and then use this new command:
If \$X\$ and \$Y\$ are independent,
\[
\var(X+Y) = \var(X)+\var(Y)
\]
If you want limits that go above and below the operator (like \(\sum\)) use the starred versions (\(\operatorname*{\langle name\rangle}\) or \(\DeclareMathOperator*{\langle command\rangle}{\langle name\rangle}\)).

Table 2.1: Predefined Operator Names (taken from amsmath documentation)

\[
\begin{array}{llllllll}
\arccos & \arccos & \deg & \deg & \lg & \lg & \text{projlim} & \text{projlim} \\
\arcsin & \arcsin & \det & \det & \lim & \lim & \text{sec} & \text{sec} \\
\arctan & \arctan & \dim & \dim & \text{liminf} & \text{liminf} & \sin & \sin \\
\arg & \arg & \exp & \exp & \text{limsup} & \text{limsup} & \sinh & \sinh \\
\cos & \cos & \gcd & \gcd & \ln & \ln & \text{sup} & \text{sup} \\
\cosh & \cosh & \hom & \hom & \log & \log & \tan & \tan \\
\cot & \cot & \inf & \inf & \max & \max & \tanh & \tanh \\
\coth & \coth & \text{injlim} & \text{injlim} & \min & \min & \text{varprojlim} & \text{varprojlim} \\
\csc & \csc & \ker & \ker & \Pr & \Pr \\
\varlimsup & \lim & \varinjlim & \lim & \text{varliminf} & \lim & \text{varprojlim} & \lim
\end{array}
\]

2.6 Color vs Grayscale

It’s helpful if authors supply grayscale versions of their articles in the event that the article is to be incorporated into a black and white printed book. With external PDF, PNG or JPG graphic files, you just need to supply a grayscale version of the file. For example, if the file is called
myimage.png, then the gray version should be myimage-gray.png or myimage-gray.pdf or myimage-gray.jpg. You don't need to modify your code. The jmlr class checks for the existence of the grayscale version if it is print mode (provided you have used \includegraphics and haven't specified the file extension). This check is performed by code provided by the jmlr class not the jmlrutils package.

\ifprint \ifprint{true part}\{false part}\fi\end{ifprint}

You can use \ifprint to determine which mode you are in. For example:

in \figureref{fig:nodes}, the \ifprint{dark gray}{purple} ellipse represents an input and the \ifprint{light gray}{yellow} ellipse represents an output.

Another example:

{\ifprint{\bfseries}{\color{red}}important text!}

You can use the class option gray to see how the document will appear in gray scale mode. The xcolor class is loaded with the x11names option, so you can use any of the x11 predefined colors (listed in the xcolor documentation).

2.7 Where To Go For Help

If you have a general \LaTeX query, the first place to go to is the UK TUG FAQ\(^5\).

If you are unfamiliar or just getting started with \LaTeX, there's a list of on-line introductions to \LaTeX at http://www.tex.ac.uk/cgi-bin/texfaq2html?label=man-latex or have a look at \LaTeX for Complete Novices.

There are also forums, mailing lists and newsgroups. For example, \LaTeX on StackExchange (http://tex.stackexchange.com/), the \LaTeX Community (http://www.latex-community.org/), the texhax mailing list (http://tug.org/mailman/listinfo/texhax) and comp.text.tex (archives available at http://groups.google.com/group/comp.text.tex/).

Documentation for packages or classes can be found using the texdoc application. For example:

texdoc natbib

Alternatively, you can go to http://www.ctan.org/pkg/\langle name\rangle where \langle name\rangle is the name of the package. For example: http://www.ctan.org/pkg/natbib

For a general guide to preparing papers (regardless of whether you are using \LaTeX or a word processor), see Kate L. Turabian, "A manual for writers of term papers, theses, and dissertations", The University of Chicago Press, 1996.

\(^4\)http://ctan.org/pkg/xcolor
\(^5\)http://www.tex.ac.uk/faq
3 Guidelines for Production Editors

The jmlrbook class can be used to combine articles that use the jmlr document class into a book. The following sample files are provided: paper1/paper1.tex, paper2/paper2.tex, paper3/paper3.tex, jmlr-sample.tex, jmlrwcp-sample.tex, jmlrbook-sample.tex and proceedings-sample.tex. All but the last two are articles using the jmlr class. The last two (jmlrbook-sample.tex and proceedings-sample.tex) uses the jmlrbook class file to combine the articles into a book. Note that no modifications are needed to the files using the jmlr class when they are imported into the book. They can either be compiled as stand-alone articles or with the entire book.

Before you compile the book, make sure that all the articles compile as stand-alone documents (and run BibT\LaTeX where necessary). You can use the makejmlrbookgui application to compile the book. See http://www.dickimaw-books.com/software/makejmlrbookgui/ for details.

3.1 jmlrbook Class Options

\textbf{nowcp} The imported pre-published articles were published in the Journal of Machine Learning Research (default).

\textbf{pmlr} The imported pre-published articles were published in the Proceedings of Machine Learning Research (PMLR).

\textbf{wcp} The imported pre-published articles were published in the JMLR Workshop and Conference Proceedings (JMLR W&CP).

If the book has a mixture of JMLR, JMLR W&CP or PMLR articles, you can switch between them using

\begin{verbatim}
\jmlrnowcp
\jmlrnowcp
\end{verbatim}

(for JMLR) or

\begin{verbatim}
\jmlrwcp
\jmlrwcp
\end{verbatim}

(for JMLR W&CP) or

\begin{verbatim}
\jmlrpmlr
\jmlrpmlr
\end{verbatim}
(for PMLR). Alternatively, you can set the name of the journal or conference proceedings using:

\jmlrproceedings{(short title)}{(long title)}

\textcolor{red}{\textbf{color}}  Color version (see Section 2.6). Use this option for the on-line version with hyperlinks enabled (default).
\textcolor{red}{\textbf{gray}}  Grayscale version (see Section 2.6). Use this option for the print version without hyperlinks.
\textcolor{red}{\textbf{tablecaption=top}} in a table environment, \texttt{\textbackslash floatconts} puts the caption at the top.
\textcolor{red}{\textbf{tablecaption=bottom}} in a table environment, \texttt{\textbackslash floatconts} puts the caption at the bottom.
\textcolor{red}{\textbf{letterpaper}}  Set the paper size to letter (default).
\textcolor{red}{\textbf{7x10}}  Set the paper size to $7 \times 10$ inches.
\textcolor{red}{\textbf{10pt}}  Use 10pt as the normal text size.
\textcolor{red}{\textbf{11pt}}  Use 11pt as the normal text size (default).
\textcolor{red}{\textbf{12pt}}  Use 12pt as the normal text size.

3.2 The Preamble

Any packages that the imported articles load (which aren't automatically loaded by jmlr) must be loaded in the book's preamble. For example, if one or more of the articles load the siunitx package, this package must be loaded in the book.

Commands that are defined in the imported articles will be local to that article unless they have been globally defined using \texttt{\textbackslash gdef} or \texttt{\textbackslash global}. Since most authors use \texttt{\textbackslash newcommand} and \texttt{\textbackslash newenvironment} (or \texttt{\textbackslash renewcommand} and \texttt{\textbackslash renewenvironment}) this shouldn't cause a conflict if more that one article has defined the same command or environment. For example, in the sample files supplied, both \texttt{paper1/paper1.tex} and \texttt{paper2/paper2.tex} have defined the command \texttt{\textbackslash samplecommand} using \texttt{\textbackslash newcommand}. As long as this command isn't also defined in the book, there won't be a conflict.

\textcolor{red}{\textbf{\title}} \texttt{\textbackslash title[(PDF title)]{(book title)}}

In the book preamble, \texttt{\textbackslash title} sets the book title and the optional argument is used for the PDF title, which will be displayed when the reader views the PDF file's properties in their PDF viewer. (Note that in the imported articles, \texttt{\textbackslash title} sets the article's title and the optional argument sets the short title for the page header and table of contents.)
\author{[PDF author(s)]{(book author(s))}}

In the book preamble, \author sets the book's author (or editor) and the optional argument is used for the PDF author, which will be displayed when the reader views the PDF file's properties in their PDF viewer. (Note that in the imported articles, \author sets the article's author and the optional argument sets the short author list for the page header.)

\volume{\number{}}

This command sets the book's volume number. Omit if the book has no volume number.

\subtitle{\sub-title}

This command sets the book's subtitle. Omit if the book has no sub-title.

\logo{\url}{{image command}}

This sets the book's title image. Use \includegraphics and omit the file extension. If you provide a grayscale version as well as a color version, the grayscale version will be used for the print version of the book. (See Section 2.6 for further details.) The optional argument, if present, was formerly used by makejmlrbookgui to make the logo a link to \url on the index HTML page. (The HTML pages are no longer generated by the application as PMLR now generate the HTML from the .bib file for the proceedings.)

\team{\team-title}

This can be used to set the name of the editorial team. This command may be omitted if not required.

\productioneditor{\name}

This command may be used to name the production editor. The command may be omitted if not required.

\jmlrlocation{\location}

This specifies the workshop location. By default this doesn't appear on the title page. See Section 3.4 for details on how to modify the layout of the title page.

### 3.3 Main Book Commands

All commands that are provided by the \jmlr class are also available with the \jmlrbook class, but some commands might behave differently depending on whether they are in the main part of the book or within the imported articles.

In the main part of the book you can use the following commands:
\maketitle

This displays the book’s title page. Note that \maketitle has a different effect when used in imported articles.

\frontmatter

Use this command at the start of the front matter (e.g. before the foreword or preface). This will make chapters unnumbered even if you use \chapter instead of \chapter*. It also sets the page style and sets the page numbering to lower case Roman numerals.

\authorsignoff

This environment may be used by the author signing off at the end of a chapter such as the foreword. Within the environment use:

\Author{\langle details\rangle}

for the author’s details. More than one \Author should be used if there is more than one author. Example:

\begin{authorsignoff}
\Author{Nicola Talbot\\
University of East Anglia}
\Author{Anne Author\\
University of No Where}
\end{authorsignoff}

\preface

This environment may be used to typeset the preface. This starts a new chapter using \chapter{\prefacename} where \prefacename defaults to “Preface”. This environment should typically go in the front matter and is provided to allow makejmlrbookgui create a standalone document for the preface. The optional argument is the filename (without any extension or path) that will be used by makejmlrbookgui. This defaults to preface but, to conform with PMLR guidelines, should be changed to the surname of the first author (editor) followed by the final two digits of the year. See the PMLR website for further details of the guidelines.

\signoff

\begin{signoff}\langle team name\rangle\langle date\rangle\\
\langle editor list\rangle
\end{signoff}
This environment may be used by the editorial team when signing off a chapter such as the preface. If the optional argument is omitted, “The Editorial Team” is used. If you are using the preface environment described above, the signoff environment must go inside the preface environment.

Within the signoff environment use:

```latex
\Editor{\{details\}}
```

for each editor. Example:

```latex
\begin{signoff}{March 2010}
% First editor:
\Editor{Nicola Talbot\ University of East Anglia\ mailto{N.Talbot@uea.ac.uk}}
% Second editor:
\Editor{Anne Editor\ University of Nowhere\ mailto{ae@sample.com}}
\end{signoff}
```

\tableofcontents

This command displays the book’s table of contents. Note that it has a different effect if used in an imported article.

\mainmatter

Use this command to switch to the book’s main matter. This will switch the chapter numbering back on, reset the page numbering to Arabic and set up the main page style.

\part[\{short title\}]{\{title\}}

If used in the main part of the book, this command will start a new part and issue a clear double page. Note that this command has a different effect if used in an imported article (or inside the jmlrpapers environment).

\addtocpart{\{title\}}

This adds \textit{\{title\}} to the table of contents, issues a clear double page, but doesn’t display any text or affect the part numbering.

\chapter[\{short title\}]{\{title\}}

This command may be used in the main body of the book but will cause an error if used within an imported article (or inside the jmlrpapers environment).
These commands may be used in the main body of the book or within imported articles. In the main body of the book (outside of the \texttt{jmlrpapers} environment) they need to be within a chapter and will be numbered according to the chapter.

\begin{jmlrpapers}
\importpubpaper\texttt{[\langle\text{label}\rangle]}\texttt{[\langle\text{directory}\rangle]}\texttt{[\langle\text{file}\rangle]}\texttt{[\langle\text{pages}\rangle]}
\end{jmlrpapers}

This imports an article that has already been published elsewhere. The \langle\text{pages}\rangle argument should be the page range from the previously published version of this article. This may not necessarily be the same as the page range of the article in the book. The directory the imported file is contained in is given by \langle\text{directory}\rangle. If the file is in the same directory as the book, use a dot. The file name is given by \langle\text{file}\rangle. The article is also given a label, specified by the optional argument. This is \langle\text{directory}\rangle/\langle\text{file}\rangle by default. The label is used as a prefix to labels in the imported articles which ensures that cross-references are unique. You can also
use this label to reference the article elsewhere in the book (see Section 3.3.2).

\importpaper
\importarticle

Imports an article that is being published in the book. The arguments are the same as above except that there is no page range (the page range is computed automatically).

This imports an article that hasn't been published elsewhere. There is no page range, but the other arguments are the same as those describe above for \importpubpaper.

Example: to import a previously published paper paper1/paper1.tex and an unpublished paper paper2/paper2.tex:

\begin{jmlrpapers}
\importpubpaper{paper1}{paper1}{23--45}
\importarticle{paper2}{paper2}
\end{jmlrpapers}

3.3.1 Two Column Articles in a One Column Book

The jmlrbook class column style will override the column style of the imported articles. You can use the twocolumn class option to jmlrbook, but this will make the whole book with two columns. If you only want the imported articles to be in two columns, then put \twocolumn in the jmlrpapers environment to switch on two column formatting. The effect will be localised to the end of the environment.

3.3.2 Cross-Referencing

You can cross-reference other parts of the book using the standard \label/\ref mechanism, but if you want to reference something within an imported article, you must prefix the label with the label given when importing the article (that is, the optional argument to \importpubpaper, \importpaper or \importarticle). For example, if you want to reference a section labelled sec:results in the imported paper paper1/paper1.tex, you would need to do:

see Section~\ref{paper1/paper1sec:results}

or

see \sectionref{paper1/paper1sec:results}

In addition to the commands described in Section 2.5.6, the jmlrbook class also provides the following cross-referencing commands:

\chapterref

Reference a chapter or chapters. The argument is a comma-separated list of labels.
3.4 Altering the Layout of the Main Title Page

The main body of the book's title page is given by the command \titlebody. Within the definition of this command, you can use:

\SetTitleElement{\element}{\pre}{\post}

where \element can be: title, volume, issue\(^1\), subtitle, logo, team, author, date, productioneditor. The \pre and \post arguments specify what to do before and after the element. Note that \SetTitleElement does nothing if that element hasn't been set. For example, if \volume has been omitted or \volume{} is used, then

\SetTitleElement{volume}{\mainvolume}{\postmainvolume}

will do nothing (so you don't end up with Volume:).

\IfTitleElement{\element}{\truepart}{\falsepart}

\(^1\)The default title page layout doesn't use issue, but if required it can be set with \issue{\number}
This does \textit{true part} if \textit{element} has been set otherwise it does \textit{false part}. For example, \texttt{postmainvolume} is defined as:

\begin{verbatim}
\newcommand{\postmainvolume}{% 
  \IfTitleElement{subtitle}{}{:}\par\relax 
}
\end{verbatim}

This means that it will only print a colon after the volume number if the subtitle has been set.

The default definition of \texttt{titlebody} is:

\begin{verbatim}
\newcommand{\titlebody}{% 
  \SetTitleElement{title}{\maintitlefont}{\postmaintitle}% 
  \SetTitleElement{volume}{\mainvolumefont}{\postmainvolume}% 
  \SetTitleElement{subtitle}{\mainsubtitlefont}{\postmainsubtitle}% 
  \SetTitleElement{logo}{\mainlogofont}{\postmainlogo}% 
  \SetTitleElement{team}{\mainteamfont}{\postmainteam}% 
  \SetTitleElement{author}{\mainauthorfont}{\postmainauthor}% 
  \SetTitleElement{productioneditor}{\mainproductioneditorfont}{\postmainproductioneditor}% 
  \{\postmainproductioneditor}% 
}
\end{verbatim}

\section*{3.5 Potential Pitfalls}

The \texttt{combine} class and \texttt{hyperref} package are individually both easily broken by packages that change certain internals and they don't ordinarily work together. The \texttt{jmlrbook} class applies patches to the internal referencing mechanism to make them work together, but it's a fairly fragile alliance. Some packages are known to break it, for example \texttt{subfig}, \texttt{pdffpages} and \texttt{geometry}. This is why the \texttt{jmlr} class checks for known problem packages and generates an error message to dissuade authors from using them. It's likely that there are other packages that may cause a problem and, as they are found, they will be added to the check list. Also, it's possible for an author to disable the package checking mechanism if they are determined to use a particular package.

In the event that an article has loaded a problem package, the editors will have to decide whether to ask the author to change the article so that it doesn't cause a problem or to make the changes themselves or to find a way of fudging things to get it to work. It depends on the level of \LaTeX{} expertise amongst the editors and the time available.

Another problem that can arise is when different articles use packages that conflict. For example, one article uses package \texttt{foo} and another uses package \texttt{bar}. Each article compiles okay as a stand-alone article, but when combined \texttt{foo} and \texttt{bar} conflict. Another problem may occur when articles load the same package but with conflicting package options. To reduce the chance of this occurring, the \texttt{jmlr} class loads some commonly used packages. For example, it loads the \texttt{algorithm2e} package with the \texttt{algo2e} and \texttt{ruled} options and provides the \texttt{algorithm} environment in addition to \texttt{algorithm2e}'s \texttt{algorithm} environment. Different versions of the same package can also be a problem. To help counteract the problem caused by different papers using different versions of the \texttt{algorithm2e} package, \texttt{jmlrbook} defines most of the old style commands if they don't exist.
Articles that use different input encodings can also cause a problem. For example, if one article uses utf8 and another uses latin1. If the authors have directly entered a diacritic or ligature, such as é or æ, instead of using a \LaTeX command, such as ‘\’e or ‘\ae, then this will cause an error on compiling the book. The choice then is to either change all non-keyboard characters with the appropriate \LaTeX commands or to use the \inputencoding command, supplied by the inputenc package, to switch the encoding at the start of each article. One thing to watch out for are bib files that contain a mixture of encodings caused by copying and pasting from different sources. Version 0.4.2b of makejmlrbookgui provides a function to search for characters outside the range 0x20 (space) and 0x7E (tilde).

Authors who use \nonumber within an equation environment can mess up the hyperlinks. Remove \nonumber and change the equation environment to \[ ... \] (or just make it a numbered equation).

If the article changes the graphics path using \graphicspath, jmlrbook won’t find the graphics if the imported articles aren’t in the same directory as the book.

The makejmlrbookgui application provides some diagnostic tools, which can help detect some common problems. It’s manual also has a troubleshooting section.

\footnote{2 and may also cause a problem for the editor’s text editor.}
4 The Code

4.1 jmlrutils.sty Code

Non-class dependent code. This package is automatically loaded by jmlr but may be used with other classes.

\ProvidesPackage{jmlrutils}[2020/01/31 v1.26 (NLCT)]

Package options:

\ifjmlrutilsmaths Determine if the maths commands should be provided.
\newif\ifjmlrutilsmaths
\jmlrutilsmathstrue
\DeclareOption{maths}{\jmlrutilsmathstrue}
\DeclareOption{nomaths}{\jmlrutilsmathsfalse}
\fi

\ifjmlrutilstheorems Determine if the theorem environments should be provided.
\newif\ifjmlrutilstheorems
\jmlrutilstheoremstrue
\DeclareOption{theorems}{\jmlrutilstheoremstrue}
\DeclareOption{notheorems}{\jmlrutilstheoremsfalse}
\fi

\ifjmlrutilssubfloats Determine if the sub-floats should be provided.
\newif\ifjmlrutilssubfloats
\jmlrutilssubfloatstrue
\DeclareOption{subfloats}{\jmlrutilssubfloatstrue}
\DeclareOption{nosubfloats}{\jmlrutilssubfloatsfalse}
\fi

\ProcessOptions

Requires etoolbox:
\RequirePackage{etoolbox}

If the maths commands are needed, load amsmath.
\ifjmlrutilsmaths
\RequirePackage{amsmath}
\fi

The conditional \iftablecaptiontop will already have been defined by the jmlr class, so only needs to be defined if not already done.
4.1.1 Cross-Referencing

Convenient macros for cross-referencing.

\newcommand*{\jmlr@reflistsep}{, }
\newcommand*{\jmlr@reflistlastsep}{ and }
\newcommand*{\sectionrefname}{Section}
\newcommand*{\sectionsrefname}{Sections}
\newcommand*{\equationrefname}{Equation}
\newcommand*{\equationsrefname}{Equations}
\newcommand*{\tablerefname}{Table}
\newcommand*{\tablesrefname}{Tables}
\newcommand*{\figurerefname}{Figure}
\newcommand*{\figuresrefname}{Figures}
\newcommand*{\algorithmrefname}{Algorithm}
\newcommand*{\algorithmsrefname}{Algorithms}
\newcommand*{\theoremrefname}{Theorem}
\newcommand*{\theoremsrefname}{Theorems}
\newcommand*{\lemmarefname}{Lemma}
\newcommand*{\lemmasrefname}{Lemmas}
\newcommand*{\remarkrefname}{Remark}
\newcommand*{\remarksrefname}{Remarks}
\newcommand*{\corollaryrefname}{Corollary}
\newcommand*{\corollarysrefname}{Corollaries}
\newcommand*{\definitionrefname}{Definition}
\newcommand*{\definitionsrefname}{Definitions}
\newcommand*{\conjecturerefname}{Conjecture}
\newcommand*{\conjecturesrefname}{Conjectures}
\newcommand*{\axiomrefname}{Axiom}
\newcommand*{\axiomsrefname}{Axioms}
\newcommand*{\examplerefname}{Example}
\newcommand*{\examplesrefname}{Examples}
\newcommand*{\appendixrefname}{Appendix}
\newcommand*{\appendixsrefname}{Appendices}
\newcommand*{\partrefname}{Part}
\newcommand*{\partsrefname}{Parts}

Cross-reference a particular structural element. The first argument is the list of labels, the second argument is a control sequence containing the singular tag, the third argument a control sequence containing the plural tag, the fourth argument is text to go before the reference number, e.g. an opening bracket, and the fifth argument is text to go after the reference number, e.g. a closing bracket.
\sectionref
\newcommand*{\sectionref}[1]{\objectref{#1}{\sectionrefname}{\sectionsrefname}{}{}}

\equationref
\newcommand*{\equationref}[1]{\objectref{#1}{\equationrefname}{\equationsrefname}()}

\tableref
\newcommand*{\tableref}[1]{\objectref{#1}{\tablerefname}{\tablesrefname}{}{}}

\figureref
\newcommand*{\figureref}[1]{\objectref{#1}{\figurerefname}{\figuresrefname}{}{}}

\algorithmref
\newcommand*{\algorithmref}[1]{\objectref{#1}{\algorithmrefname}{\algorithmsrefname}{}{}}

\theoremref
\newcommand*{\theoremref}[1]{\objectref{#1}{\theoremrefname}{\theoremsrefname}{}{}}

\lemmaref
\newcommand*{\lemmaref}[1]{\objectref{#1}{\lemmarefname}{\lemmasrefname}{}{}}
4.1.2 Figures, Tables and Algorithms

The first argument is the label, the second argument contains the caption (using \caption) and the third argument contains the contents of the float.

This will already have been defined if the jmlr class was loaded.
The following macro and environment assume that algorithm2e has been loaded (which is done by the jmlr class). If the jmlrutils package is loaded without the jmlr class, the algorithm2e package will have to be explicitly loaded.

\algocfconts Command used by \floatconts to display the caption contents.
\newcommand{\algocfconts}{\@algocf@pre@ruled #2\label{#1} \kern2pt\hrule height.8pt depth0pt\kern2pt #3\@algocf@pre@ruled}

The algorithm environment should float like a figure or table. It should use the same counter as the algorithm2e environment.
\newenvironment{algorithm}[1][htbp]{%\ifundef{\algocf}{‘algorithm2e' package is required if you want to use the algorithm environment}{% \begin{algocf}[#1] \renewcommand{$\@makecaption$}{\hskip\AlCapHSkip \parbox{\hsize}{\algocf@captiontext{##1}{##2}}} \% \end{algocf}}\@jmlr@ifgraphicxloaded \AtBeginDocument{% \@ifpackageloaded{graphicx}{% \\let\@jmlr@ifgraphicxloaded\@firstoftwo} \% \end{algocf}}\includeteximage Provide a command like \includegraphics that includes a file containing \LaTeX picture code (e.g. pgf).
\newcommand*{\includeteximage}{% \@jmlr@ifgraphicxloaded{\let\@jmlr@ifgraphicxloaded\@firstoftwo} \%}
Sub floats.

If jmlrutilssubfloats

The subfig package breaks jmlrbook.cls, so define \subfig here. (This is fairly primitive.)

\c@subfigure Define subfigure counter:
\newcounter{subfigure}
\@addtoreset{subfigure}{figure}

\thesubfigure
\renewcommand{\thesubfigure}{\alph{subfigure}}

\p@subfigure
\renewcommand{\p@subfigure}{\expandafter{\p@subfigure}}
\newcommand{\@p@subfigure}[1]{\protect{\subfigurelabel{\thefigure}{\thesubfigure}{#1}}}

\subfigref Reference the sub-figure without including the figure number.
\newcommand{\subfigref}[1]{{#1\subfigurelabel{#2}}}
181 \ref{#1}\%  
182 }\%  
183 }  
184 \newcommand*{\subfigref}[1]{\%  
185 \let\@objectname\@empty  
186 \def\@objectref{\%  
187 \let\@prevsep\@empty  
188 \@for\@thislabel:=#1\do{\%  
189 \toks@{\@prevsep}\%  
190 \protected@edef\@objectref{\@objectref\the\toks@\%  
191 \protect\@subfigref{\@thislabel}}\%  
192 \ifx\@objectname\@empty\%  
193 \let\@objectname\@nil\%  
194 \else\%  
195 \let\@objectname\relax\%  
196 \let\@prevsep\@jmlr@reflistsep\%  
197 \fi\%  
198 }\%  
199 \ifx\@objectname\relax\%  
200 \let\@prevsep\@jmlr@reflistlastsep\%  
201 \fi\%  
202 \@objectref\%  
203 }\%  

\subfigurelabel  
204 \newcommand*{\subfigurelabel}[1]{{{\textit{#1}}}}\%  

@subfloatcapbox  Box to store subfloat caption.  
205 \newsavebox@subfloatcapbox  

@subfloatcontsbox  Box to store subfloat contents.  
206 \newsavebox@subfloatcontsbox  

\subfigure  
207 \newcommand*{\subfigure}[1][]{\%  
208 \bgroup\%  
209 \def\@subfigcap{#1}\%  
210 \@subfigure\%  
211 }\%  
212 \newcommand*{\@subfigure}[2][b]{\%  
213 \advance\c@figure by 1\relax\%  
214 \refstepcounter{subfigure}\%  
215 \sbox\@subfloatcapbox{\subfigurelabel{\thesubfigure}}\%  
216 \ifx\@subfigcap\@empty\%  
217 \else\%  
218 \space\@subfigcap\%  
219 \fi\%  
220 \sbox\@subfloatcontsbox{#2}\%
Sub-tables:

\c@subtable Define subtable counter:
234 \newcounter{subtable}
235 \@addtoreset{subtable}{table}

\thesubtable
236 \renewcommand*{\thesubtable}{\alph{subtable}}

\p@subtable
237 \renewcommand*{\p@subtable}{\expandafter\@p@subtable}
238 \newcommand*{\@p@subtable}[1]{%
239 \protect\@subtablelabel{\thetable}{\thesubtable}%
240 }

\@subtablelabel Define how label appears.
241 \newcommand*{\@subtablelabel}[2]{#1\subtablelabel{#2}}

\subtabref Reference the sub-table without including the table number.
242 \newcommand*{\subtabref}[1]{%
243 {%
244 \def\@subtablelabel##1##2{\subtablelabel{##2}}%
245 \ref{#1}%
246 }%
247 }%
248 \newcommand*{\subtabref}[1]{%
249 \let\@objectname\@empty
250 \def\@objectref{\empty}
251 \let\@prevsep\@empty
252 \@for\@thislabel:=#1\do{%
253 \toks0[\@prevsep]%
254 \protected@edef\@objectref{\objectref\the\toks0}
255 \protect\@subtabref{\@thislabel}%
256 \ifx\@objectname\@empty
257 \let\@objectname\@nil
258 \else
259 \let\@objectname\@empty
260 \fi
261 }%
262 }%
4.1.3 General Markup

Provide maths command if required.
\renewcommand*{\set}[1]{\ensuremath{\mathcal{#1}}}

Keep a copy of original \verb|\vec| in case it's wanted.

\let\orgvec\vec

\renewcommand*{\vec}[1]{\boldsymbol{#1}}

End of maths commands.

\enumerate*

Define an enumerate style environment where the nested environments all use the same counter. It uses the enumi counter.

\newenvironment{enumerate*}[309]{\ifnum\@enumdepth=0\relax\setcounter{enumi}{0}\fi\ifnum\@enumdepth>\thr@@\@toodeep\else\advance\@enumdepth\@ne\def\@enumctr{enumi}\list{\labelenumi}{\@nmbrlisttrue\def\@listctr{enumi}\def\makelabel##1{\hss\llap{##1}}}\fi}{\endlist}

\newcommand*{\altdescriptionlabel}[1]{\normalfont\bfseries #1\hfill}

\altdescription

Define a description like environment where the indent is computed from the widest label. The optional argument is the widest label.
Syntax: \mailto{\texttt{address}}
\newcommand*{\mailto}[1]{\texttt{#1}}

4.1.4 Proofs and Theorems

This code is taken from jmlr2e.sty
\jmlrBlackBox End of proof marker. This command was formerly called \BlackBox but has been renamed in case of a clash with symbol packages.
\BlackBox Backward compatibility in case it was used explicitly.
\jmlrQED
\providecommand{\jmlrQED}{\hfill\jmlrBlackBox\par\bigskip}
\proofname
\providecommand{\proofname}{Proof}

Proof environment
\newenvironment{proof}{}
{\jmlrQED}

Since theorem, ntheorem and amsthm all cause problems with the jmlr and jmlrbook classes, this package provides a simple alternative.

\theorembodyfont
\newcommand*{\theorembodyfont}[1]{{%}
% \renewcommand*{\@theorembodyfont}{#1}%
%
% \renewcommand*{\@theorembodyfont}{\normalfont\itshape}%
%
\theoremheaderfont
\newcommand*{\@theoremheaderfont}{%}
% \renewcommand*{\@theoremheaderfont}{\normalfont\bfseries }%
%
\ifdef{@jmlr@currentthm}\
{\
\letcs{\jmlr@this@theoremheader}{jmlr@thm@\@jmlr@currentthm @header@font}\
\letcs{\jmlr@this@theorembody}{jmlr@thm@\@jmlr@currentthm @body@font}\
\letcs{\jmlr@this@theoremsep}{jmlr@thm@\@jmlr@currentthm @sep}\
\letcs{\jmlr@this@theorempostheader}\
{\jmlr@thm@\@jmlr@currentthm @postheader}\
}
\
\let\jmlr@this@theorembody@\@theorembodyfont
\let\jmlr@this@theoremheader@\@theoremheaderfont
\let\jmlr@this@theoremsep\@theoremsep
\let\jmlr@this@theorempostheader\@theorempostheader
\fi
\trivlist
\item
\hskip\labelsep{\jmlr@this@theoremheader #1 \ #2 \ (#3)\
\jmlr@this@theorempostheader}\
\jmlr@this@theoremsep
\jmlr@this@theorembody
}

\newtheorem{example}{Example}

\newtheorem{theorem}{Theorem}

\newtheorem{lemma}[theorem]{Lemma}

\newtheorem{proposition}[theorem]{Proposition}

\newtheorem{remark}[theorem]{Remark}

\newtheorem{corollary}[theorem]{Corollary}

\newtheorem{definition}[theorem]{Definition}

\newtheorem{conjecture}[theorem]{Conjecture}

\newtheorem{axiom}[theorem]{Axiom}

End of theorem definitions.
\fi
4.2 \texttt{jmlr.cls} Code

This class is based on the \texttt{jmlr2e} package but was modified to make sure it works with \texttt{jmlr-book} which uses both combine and hyperref.

Declare class and required TeX format:

\begin{verbatim}
\NeedsTeXFormat{LaTeX2e}
\ProvidesClass{jmlr}[2020/01/31 v1.26 (NLCT) Journal of Machine Learning Research]
Need xkeyval package to have key=value class options
\RequirePackage{xkeyval}
\RequirePackage{calc}
\RequirePackage{etoolbox}
Some packages need to be loaded before hyperref so provide a hook to do this:
\jmlrprehyperref
\providecommand*{\jmlrprehyperref}{}
The following conditionals are provided to make this class play nicely with combine and aren't required for articles.
\if@openright
\newif\if@mainmatter @mainmattertrue
\ifgrayscale
Determine whether to select grayscale alternatives
\ifundefined{ifgrayscale}
  \newif\ifgrayscale
  grayscalefalse
\fi
\DeclareOptionX{color}{\grayscalefalse
  \PassOptionsToPackage{color}{xcolor}}
\DeclareOptionX{gray}{\grayscaletrue
  \PassOptionsToPackage{gray}{xcolor}}
\DeclareOptionX{draft}{\setlength\overfullrule{5pt}}
\DeclareOptionX{final}{\setlength\overfullrule{0pt}}
\iftablecaptiontop
Provide table contents command that uses this conditional. (The jmlrutils package doesn't use it.)
\end{verbatim}
Determine if the table captions should go at the top.

\texttt{tablecaptiontop}

\DeclareOptionX{tablecaptiontop}{tablecaptiontoptrue}

\texttt{tablecaptionbottom}

\DeclareOptionX{tablecaptionbottom}{tablecaptiontopfalse}

Key=value interface.

\texttt{define@choicekey{jmlr.cls}{tablecaption}[\val\nr]{top,bottom}{\%\ifcase
nr\relax\tablecaptiontoptrue\or\tablecaptiontopfalse\fi\%}}

\ifjmlrhtml Determine if we are using \TeX4ht. (Deprecated.) This option should no longer be used. The PMLR have changed the submission guidelines and the production editor should no longer supply HTML files.

\newif\ifjmlrhtml
\jmlrhtmlfalse
\DeclareOptionX{html}{\ClassWarning{jmlr}{html option is now deprecated}\jmlrhtmltrue}
\DeclareOptionX{nohtml}{\jmlrhtmlfalse}

Normal font size (default is 11pt).

\def\pt@size{11pt}
\DeclareOptionX{10pt}{\renewcommand{\pt@size}{10pt}}
\DeclareOptionX{11pt}{\renewcommand{\pt@size}{11pt}}
\DeclareOptionX{12pt}{\renewcommand{\pt@size}{12pt}}

\texttt{@jmlrproceedings} The name of the proceedings.

\newcommand*{\@jmlrproceedings}{Journal of Machine Learning Research}
The abbreviated name of the proceedings.

\newcommand*{\@jmlrabbrvproceedings}{JMLR}

Sets the title and abbreviation of the proceedings

\newcommand*{\jmlrproceedings}{\renewcommand*{\@jmlrabbrvproceedings}{#1}\renewcommand*{\@jmlrproceedings}{#2}}

\jmlrnowcp
\newcommand*{\jmlrnowcp}{\jmlrproceedings{JMLR}{Journal of Machine Learning Research}}

\jmlrwcp
\newcommand*{\jmlrwcp}{\jmlrproceedings{JMLR W\&CP}{JMLR: Workshop and Conference Proceedings}}

\jmlrpmlr
The JMLR W\&CP has been renamed PMLR, so provide code to switch to this instead,
\newcommand*{\jmlrpmlr}{\jmlrproceedings{PMLR}{Proceedings of Machine Learning Research}}

This is a journal (non JMLR W\&CP/PMLR) article:
\DeclareOptionX{nowcp}{\jmlrnowcp}
This is an article for JMLR W\&CP
\DeclareOptionX{wcp}{\jmlrwcp}
This is an article for PMLR
\DeclareOptionX{pmlr}{\jmlrpmlr}

\setlength{\textwidth}{6.75in}

\DeclareOptionX*{\PassOptionsToPackage{letterpaper}{typearea}}
Pass all remaining options to article class:
\DeclareOptionX*{\PassOptionsToClass{\CurrentOption}{article}}
Execute required options:
\ExecuteOptions{letterpaper}

Process options:
\ProcessOptionsX

Load article class.
\LoadClass[\pt@size]{article}

Can't use geometry package because it doesn't play nicely with the combine class.
\ifviiXx
\setlength{\paperwidth}{7in}
\setlength{\paperheight}{10in}
\setlength{\textwidth}{5.25in}
\setlength{\textheight}{8.2in}
\setlength{\topmargin}{0.4in}
\setlength{\headheight}{0.2in}
\setlength{\headsep}{0.2in}
\setlength{\hoffset}{-1in}
\setlength{\voffset}{-1in}
\setlength{\evensidemargin}{0.75in}
\setlength{\oddsidemargin}{1.0in}
\else
\setlength{\oddsidemargin}{0.25in}
\setlength{\evensidemargin}{0.25in}
\setlength{\marginparwidth}{0.07 true in}
\setlength{\topmargin}{-0.5in}
\addtolength{\headsep}{0.25in}
\setlength{\textheight}{8.5 true in}
\setlength{\textwidth}{6.0 true in}
\fi

Need to add jmlr end document hook before natbib adds a \clearpage to it.
\AtEndDocument{\@jmlrenddoc}

Required packages:
\RequirePackage{amsmath}
\RequirePackage{amssymb}
\RequirePackage{natbib}
\RequirePackage{graphicx}
\RequirePackage{url}
\PassOptionsToPackage{x11names}{xcolor}
\RequirePackage{xcolor}

Allow old command names in the event that the proceedings contains a mixture of papers that use old and new versions. (This means that editors need to install the newer version.) For some reason, loading algorithm2e causes the message
(\end occurred inside a group at level 1)

I don't know why, but it's outside the control of this class.
\PassOptionsToPackage{algo2e,ruled}{algorithm2e}
\RequirePackage{algorithm2e}
Set the algorithm margin to zero.
561 \setlength{\algomargin}{0pt}

Load jmlrutils before hyperref.
562 \RequirePackage{jmlrutils}

Do all the stuff that needs to be done before hyperref is loaded:
563 \jmlrprehyperref

Do stuff that has to come immediately before hyperref is loaded:
564 \@ifundefined{@pre@hyperref}{}\{@pre@hyperref

Load hyperref:
565 \RequirePackage{hyperref}
566 \RequirePackage{nameref}

567% Do stuff that has to come immediately after \textit{hyperref} and \textit{nameref} are loaded:
569%\changes{1.16}{2012/05/15}{added \cs{@post@hyperref}}
570 \@ifundefined{@post@hyperref}{}\{@post@hyperref

Set up hyperref options:
571 \hypersetup{colorlinks,
572 linkcolor=blue,
573 citecolor=blue,
574 urlcolor=magenta,
575 linktocpage,
576 plainpages=false}

If this is the print version, need to disable the hyperlinks:
578 \hypersetup{draft}
579\fi

Float parameters: the following settings were copied from jmlr2e.sty
580 \renewcommand{\topfraction}{0.95} % let figure take up nearly whole page
581 \renewcommand{\textfraction}{0.05} % let figure take up nearly whole page
582 \widowpenalty=10000\relax
583 \clubpenalty=10000\relax

Put marginal notes on the outside of the page
584 \@mparswitchtrue

Use the plainnat bibliography style and set up the required punctuation.
585 \bibliographystyle{plainnat}
586 \bibpunct{(}{)}{;}{a}{,}{,}
4.2.1 Sections

\section
587 \renewcommand{\section}{\@startsection{section}{1}{\z@}{-0.24in}{-1ex}{\normalfont\rmfamily\bfseries\large\raggedright}}
588
590
\subsection
592 \renewcommand{\subsection}{\@startsection{subsection}{2}{\z@}{-0.2in}{-1ex}{\normalfont\rmfamily\bfseries\normalsize\raggedright}}
593
595
\subsubsection
597 \renewcommand{\subsubsection}{\@startsection{subsubsection}{3}{\z@}{-0.18in}{-1ex}{\normalfont\normalsize\rmfamily\mdseries\scshape\raggedright}}
598
600
\paragraph
602 \renewcommand{\paragraph}{\@startsection{paragraph}{4}{\z@}{1.5ex plus 0.5ex minus .2ex}{-1em}{\normalfont\normalsize\rmfamily\bfseries}}
603
605
\subparagraph
607 \renewcommand{\subparagraph}{\@startsection{subparagraph}{5}{\z@}{1.5ex plus 0.5ex minus .2ex}{-1em}{\normalfont\normalsize\rmfamily\bfseries\itshape}}
608
610
\@seccntformat
Redefine the way the section number appears in the section heading.
611 \renewcommand*{\@seccntformat}[1]{\csname pre#1num\endcsname\csname the#1\endcsname.\enskip}
612
613
614
4.2.2 Footnotes

\@makefntext
Redefine \@makefntext so that the text between the footnote symbol and the footnote text can be redefined. (It looks odd having a full stop after a symbol.)
615 \renewcommand*{\@makefntext}[1]{\@setpar}
616
\footnoteseptext  \ The separation text between the footnote symbol and the footnote text.
\newcommand*{\footnoteseptext}{.}

\thanks  \ Added optional argument to \footnotetext as per \url{http://tex.stackexchange.com/questions/229295}.
\renewcommand*{\thanks}{\footnotemark[\arabic{footnote}]{#1}}

4.2.3 Article abstract

This code has been taken from jmlr2e.sty but with \bf updated to \bfseries

4.2.4 Keywords

This code has been taken from jmlr2e.sty but with \bf updated to \bfseries.
4.2.5 Title Page Information

This code has been taken from jmlr2e.sty.
Title stuff, borrowed in part from aaai92.sty

\newlength\aftertitskip \newlength\beforetitskip
\newlength\interauthorskip \newlength\aftermaketitskip

Changeable parameters.
\setlength\aftertitskip{0.1in plus 0.2in minus 0.2in}
\setlength\beforetitskip{0.05in plus 0.08in minus 0.08in}
\setlength\interauthorskip{0.08in plus 0.1in minus 0.1in}
\setlength\aftermaketitskip{0.3in plus 0.1in minus 0.1in}

\titlebreak Acts like new line in the paper title, but with jmlrbook acts like a space in the table of contents and bookmarks.
\newcommand*{\titlebreak}{\newline}

\titletag
\newcommand*{\titletag}{[1]}{}

\title Override definition of \title to allow for an optional argument (short title)
\renewcommand*{\title}[2][\@title]{%\def\@shorttitle{#1}\def\@title{#2}\protected@write\@auxout{}{\string\jmlr@title{#1}{#2}}%\jmlrtitlehook}

\@shorttitle The short title of the document is initialised to \jobname to ensure a basic document will compile even if no title is set.
\newcommand*{\@shorttitle}{\jobname}

\jmlrtitlehook
\newcommand*{\jmlrtitlehook}{}

\jmlr@title AUX command provided for MakeJmlrBookGUI
\newcommand*{\jmlr@title}[2]{}

\author Override definition of \author to allow for an optional argument (list of authors for page heading)
\renewcommand*{\author}[2][{}]{%\def\@author{#2}\def\@sauthor{#1}\def\@jmlr@aux@author{#2}@onelevel@sanitize\@jmlr@aux@author\ifx\@sauthor\@empty\let\@jmlr@aux@sauthor\@jmlr@aux@author\else\let\@shortauthor\@sauthor\fi}

\@jmlr@aux@author\jmlr@aux@author\@jmlr@aux@author\\else\let\@shortauthor\@sauthor\fi
\let\@author\@shortauthor\@sauthor
\maketitle

Provide a different title layout for HTML

\jmlrhtmlmaketitle

\newcommand{\jmlrhtmlmaketitle}{%
  \ifx\@jmlr@authors\@empty
    \sbox\jmlrbox{\let\addr\relax\@author}\fi
  \noindent\HCode{<h2>}\@title\HCode{</h2>}
  \noindent\@jmlr@authors
\}

Define a save box
\newsavebox\jmlrbox

\maketitle If we're creating HTML, set \maketitle to \jmlrhtmlmaketitle, otherwise set it to \jmlrmaketitle

\if\jmlrhtml
  \let\maketitle\jmlrhtmlmaketitle
\else
  \let\maketitle\jmlrmaketitle
\fi

Author and editor information.
\def\@startauthor{\noindent \normalsize \bfseries}
\def\@endauthor{}
\def\@starteditor{\noindent \small \{\bfseries \@edname:\}}
\def\@endeditor{\normalsize}

Provide hooks to make it easier to adapted with combine class.
\%jmlrpretitle
735 \def\jmlrpretitle{\vskip\beforetitskip\begin{center}\Large\bfseries}
\%jmlrposttitle
736 \def\jmlrposttitle{\par\end{center}\vskip\aftertitskip}
\%nametag
737 \newcommand*{\nametag}{[1]}
\%jmlrpreauthor
738 \def\jmlrpreauthor{\%
739 \bgroup
740 \def\nametag##1{##1}\
741 \def\and{%\normalfont and\enspace}%
742 \def\addr{%\mdseries\small\itshape\enspace}%
743 \def\name{%\ClassError{jmlr}{Use \string\Name{Author's Name} not \string\name}{}}%
744 \def\email{%\ClassError{jmlr}{Use \string\Email{address} not \string\email}{}}%
745 \def\AND{%\@endauthor\normalfont\hss \vskip \interauthorskip
746 \@startauthor}%
747 \@startauthor
748 }
\%addr Initialise to do nothing if used outside of \author
749 \newcommand{\addr}{}
\%email
750 \def\@email{%\hfill\small\mdseries\scshape}%
\%name
751 \def\@name{%\normalsize\upshape\bfseries}%
\%parsename Parse a name. Appends forename to \@forenames and stores surname in \@surname.
752 \def\@parsename#1 #2\end@parsename{%
753 \def\@tmp{#2}\
754 \ifx\@tmp\@nnil
755 \def\@surname{#1}\
756 \let\@nextparsename\@parsenamenoop
757 \else
758 \getinitial#1-.\relax\relax\end\getinitial
759 \ifdef\@forenames\@empty
760 \def\@forenames{#1}%
761 \protected@edef\@initials{\@initial}%
762 \else
763 \expandafter\toks0\expandafter{\@forenames}%
764 \edef\@forenames{\space\the\toks0}%
765 \expandafter\toks0\expandafter{\@initials}%
766 \protected@edef\@initials{\the\toks0\@initial}%
767 }
\def\nametag##1{##1}\
\@name #2%
\jmlrabbrnamelist
Display list of names in abbreviated form. (Mainly designed for use with makejmlrbook for
the preface authors.) The author should be grouped if the name contains a comma.

\newcommand*{\jmlrabbrnamelist}[1]{%
\def\nametag##1{}%
\def\@jmlr@authors@sep{, }%
\def\@jmlr@namelist{}%
\@for\@thisname:=#1\do{%
\expandafter\@jmlrabbrname\expandafter{\@thisname}%
\ifx\@jmlr@namelist\@empty
\protected@edef\@jmlr@namelist{%\@initials\space\@surname
}\else
\protected@edef\@jmlr@namelist{%\@jmlr@namelist
\noexpand\@jmlr@authors@sep\@initials\space\@surname
}\fi
%}
\def\@jmlr@authors@sep{ \& }
\@jmlr@namelist
%
\Email
\newcommand*{\Email}[1]{\@email #1}
This used to enclose the title in a \vbox but this caused a problem for extremely long au-
thor/affiliation lists that spanned multiple pages, so the \vbox has been removed (in v1.26),
but the grouping has been retained.

\ kernelsmachines  Convenience command
\editorname  Label for the editor
\editorsname  Label for the editor
\@edname  This will either be Editor or Editors depending on whether \editor or \editors is used. Defaults to \editorname
\@editor  The editor or editors are stored in \@editor

60
\editor\ A single editor
\begin{verbatim}
def\editor#1{% 
  \global\let\@edname\editorname 
  \gdef\@editor{#1}% 
}%
\end{verbatim}

\editors\ Multiple editors
\begin{verbatim}
def\editors#1{% 
  \global\let\@edname\editorsname 
  \gdef\@editor{#1}% 
}%
\end{verbatim}

4.2.6 Pagestyles
This is taken from jmlr2e.sty

\firstpageno\ Set the page counter.
\begin{verbatim}
def\firstpageno#1{\setcounter{page}{#1}}
\end{verbatim}

\startpage\ If \startpage\ has been defined, use its value for the first page.
\begin{verbatim}
@ifundefined{startpage}{}{\firstpageno{\startpage}}
\end{verbatim}

Label end page.

\@jmlrenddoc\ Label end page
\begin{verbatim}
\newcommand*{\@jmlrenddoc}{% 
  \phantomsection 
  \protected@edef\@currentlabelname{end of \@shorttitle}% 
  \label{jmlrend}\null 
  \global\let\@reprint\@empty 
} 
\end{verbatim}

\@titlefoot\ Label end page
\begin{verbatim}
\newcommand{\@titlefoot}{\scriptsize \copyright\ space \@jmlryear \space \@jmlr@authors. \hfill \@reprint} 
\end{verbatim}

\reprint\ Reprint
\begin{verbatim}
\let\@reprint\@empty 
\newcommand{\reprint}[1]{% 
  \gdef\@reprint{Reprinted with permission for JMLR#1}} 
\end{verbatim}

\ps@jmlrtps\ Title page style
\begin{verbatim}
\newcommand{\ps@jmlrtps}{% 
  \let\@mkboth\@gobbletwo 
  \def\@oddhead{\scriptsize \@jmlrproceedings 
  \ifx\@jmlrvolume\@empty
  61
  \else
  \@jmlrvolume
  \fi 
  \hfill 
  \@reprint \null 
} 
\end{verbatim}
\ps@jmlrps  Page style for subsequent pages
\def\ps@jmlrps{%
  \let\@mkboth\@gobbletwo
  \def\@oddhead{\hfill \small\scshape \@shorttitle \hfill}%
  \def\@oddfoot{\hfill \small\rmfamily \thepage \hfill}%
  \def\@evenhead{\hfill \small\scshape \@shortauthor \hfill}%
  \def\@evenfoot{\hfill \small\rmfamily \thepage \hfill}%
}\let\@evenhead\@oddhead
\def\@oddfoot\@titlefoot%
\let\@evenfoot\@oddfoot%
}%
Set the page style:
\pagestyle{jmlrps}
Set the heading information:

\@jmlrvolume  The volume number:
953 \providecommand*{\@jmlrvolume}{}
\jmlrvolume
954 \newcommand*{\jmlrvolume}{1}{\renewcommand*{\@jmlrvolume}{#1}}
\@jmlrissue  The issue number:
955 \providecommand*{\@jmlrissue}{}
\jmlrissue
956 \newcommand*{\jmlrissue}{1}{\renewcommand*{\@jmlrissue}{#1}}
\@jmlryear  The year of publication:
957 \providecommand*{\@jmlryear}{}
\jmlryear
958 \newcommand*{\jmlryear}{1}{\renewcommand*{\@jmlryear}{#1}}
\@jmlrpages  The page range:
959 \providecommand*{\@jmlrpages}{\pageref{jmlrstart}--\pageref{jmlrend}}
\jmlrpages
960 \newcommand*{\jmlrpages}{1}{\renewcommand*{\@jmlrpages}{#1}}
\@jmlrsubmitted  The date the article was submitted:
961 \providecommand*{\@jmlrsubmitted}{}
\jmlrsubmitted
962 \newcommand*{\jmlrsubmitted}{1}{\renewcommand*{\@jmlrsubmitted}{#1}}
\@jmlrpublished  The date the article was published:
963 \providecommand*{\@jmlrpublished}{}
\jmlrpublished
964 \newcommand*{\jmlrpublished}{1}{\renewcommand*{\@jmlrpublished}{#1}}
\@jmlrworkshop  The name of the workshop:
965 \providecommand*{\@jmlrworkshop}{}
\jmlrworkshop
966 \newcommand*{\jmlrworkshop}{1}{%
967 \renewcommand*{\@jmlrworkshop}{#1}%
968 \protected@write@auxout{\string\jmlr@workshop}{#1}%
969}
4.2.7 Miscellany

This code was taken from jmlr2e.sty.

Define macros for figure captions and table titles.

\def\figurecaption#1#2{\noindent\hangindent 40pt
\hbox to 36pt {\small\slshape #1 \hfil}
\ignorespaces {\small #2}}

\def\figurecenter#1#2{\centerline{{\small\slshape #1} {\small #2}}}

Allow “hanging indents” in long captions

\long\def\makecaption#1#2{\vskip 10pt
\setbox0\hbox{#2\hfill}
\ifdim \wd0 >\hsize \begin{list}{#1:}{\setlength{\leftmargin}{2em}}
\setlength{\labelsep}{1em}
\item #2 \end{list}\par % Output in quote mode
\else % ELSE center.
\hbox to hsize{\box0\hfill}
\fi}

Define strut macros for skipping spaces above and below text in a tabular environment.
\def\abovestrut#1{\rule[0in]{0in}{#1}\ignorespaces}
\def\belowstrut#1{\rule[-#1]{0in}{#1}\ignorespaces}

\acks
Acknowledgements
\newcommand{\acks}[1]{\section*{Acknowledgments}#1}

\researchnote
\newcommand{\researchnote}[1]{\noindent \LARGE\itshape Research Note} #1

Other macros now moved to jmlrutils.

\ifprint
Provide command to check if this is the printed greyscale version or the online colour version.
\providecommand{\ifprint}[2]{\ifgrayscale#1\else#2\fi}

Modify \includegraphics so that it can pick up the greyscale version of images if this is
the print version. (Extension shouldn't be specified.)
\ifjmlrhtml
\else
\let\@org@Ginclude@graphics\Ginclude@graphics
Since graphics 2019/07/01, the file name parsing has changed to allow for UTF-8 characters.
So provide patches for the old and new versions and work out which one to use.
\includegraphics
This is a patched version of the old \Ginclude@graphics.
\def\@jmlr@old@Ginclude@graphics#1{%
\begingroup
\let\input@path\Ginput@path
\ifprint{\filename@parse{#1-gray}}{\filename@parse{#1}}%
\ifx\filename@ext\relax
\@for\Gin@temp:=\Gin@extensions\do{%
\ifx\Gin@ext\relax
\Gin@getbase\Gin@temp
\fi}
\else
\ifprint{\filename@parse{#1}}{}%
\Gin@getbase{\Gin@sepdefault\filename@ext}%
\ifx\Gin@ext\relax
@warning{File ‘#1’ not found}%
\def\Gin@base{\filename@area\filename@base}%
\edef\Gin@ext{\Gin@sepdefault\filename@ext}%
\fi
\fi
\else
\ifprint{\filename@parse{#1}}{}%
\Gin@getbase{\Gin@sepdefault\filename@ext}%
\ifx\Gin@ext\relax
\@latex@error{File ‘#1’ not found}%
\def\Gin@base{\filename@area\filename@base}%
\edef\Gin@ext{\Gin@sepdefault\filename@ext}%
\fi
\fi
\fi\Gin@ext\relax
\\@latex@error{File ‘#1’ not found}%
\fi
{I could not locate the file with any of these extensions:^^J\%\Gin@extensions^^J\@ehc}\%
}\
\else
\@ifundefined{Gin@rule@\Gin@ext}\
{\ifx\Gin@rule@*\@undefined\
\@latex@error{Unknown graphics extension: \Gin@ext}\@ehc
\else\
\expandafter\Gin@setfile\Gin@rule@*{\Gin@base\Gin@ext}\%
\fi}\%
{\expandafter\expandafter\expandafter\Gin@setfile\
csname Gin@rule@\Gin@ext\endcsname{\Gin@base\Gin@ext}}%
\fi
\endgroup}

This is a patch of the new version.

\def\@jmlr@new@Ginclude@graphics#1{%
\ifx\detokenize\@undefined\else
\edef\Gin@extensions{\detokenize\expandafter{\Gin@extensions}}%
\fi
\begingroup
\let\input@path\Ginput@path
\ifprint{\set@curr@file{#1-gray}}{\set@curr@file{#1}}%
\expandafter\filename@parse\expandafter{\@curr@file}%
\ifx\filename@ext\Gin@gzext
\expandafter\filename@parse\expandafter{\filename@base}%
\ifx\filename@ext\relax
\let\filename@ext\Gin@gzext
\else
\edef\Gin@ext{\Gin@ext\Gin@sepdefault\Gin@gzext}%
\fi
\let\@jmlr@filename@ext\filename@ext
\ifx\filename@ext\relax
\@for\Gin@temp:=\Gin@extensions\do{%
\ifx\Gin@ext\relax
\Gin@getbase\Gin@temp
\fi}%
\ifprint
{\ifx\Gin@ext\relax
\set@curr@file{#1}%
\expandafter\filename@parse\expandafter{\@curr@file}%
\ifx\filename@ext\Gin@gzext
\expandafter\filename@parse\expandafter{\filename@base}%
\ifx\filename@ext\relax
\let\filename@ext\Gin@gzext
\else
\edef\Gin@ext{\Gin@ext\Gin@sepdefault\Gin@gzext}%
\fi
\fi
\fi
\let\@jmlr@filename@ext\filename@ext
\ifx\filename@ext\relax
\@for\Gin@temp:=\Gin@extensions\do{%
\ifx\Gin@ext\relax
\Gin@getbase\Gin@temp
\fi}%
\ifprint
{\ifx\Gin@ext\relax
\set@curr@file{#1}%
\expandafter\filename@parse\expandafter{\@curr@file}%
\ifx\filename@ext\Gin@gzext
\expandafter\filename@parse\expandafter{\filename@base}%
\ifx\filename@ext\relax
\let\filename@ext\Gin@gzext
\else
\edef\Gin@ext{\Gin@ext\Gin@sepdefault\Gin@gzext}%
\fi
\fi
\fi
Determine which one to use:
\ifpackagelater{graphics}{2019/07/01}
\let\Ginclude@graphics\@jmlr@new@Ginclude@graphics\%
\let\Ginclude@graphics\@jmlr@old@Ginclude@graphics\%
\fi

\artappendix Switch to appendices in an article
\newcommand{\artappendix}{\par
\setcounter{section}{0}
\setcounter{subsection}{0}
\def\thesection{\Alph{section}}
\def\theHsection{\theHchapter.\Alph{section}}
\def\presectionnum{Appendix~}
}

The default assumes a stand-alone article.
\appendix
\let\appendix\artappendix
\booklinebreak Provided for book production editors to fine tune the book line breaking. Does nothing in the stand-alone article.
\newcommand{\booklinebreak}[1][1][{}]

4.2.8 Compatibility with combine.cls

Define chapters to make this class play nicely with combine. These definitions are just copied from book.cls
\newcounter{chapter}
\renewcommand{thechapter}{\@arabic\c@chapter}
\newcommand{\chapapp}{\chaptername}

Add sections to the chapter reset.
\@addtoreset{section}{chapter}

\chaptermark
\newcommand*{\chaptermark[1]{} }

Chapters should only be defined when we’re combining documents into a book.
\bookchapter
\newcommand{bookchapter}{%
\if@openright\cleardoublepage\else\clearpage\fi
\thispagestyle{plain}%
\global@topnum\z@%
\@afterindentfalse
\@afterindentfalse
\secdef{\chapter}{\chapter}
}
\artchapter Disable chapters for articles.
\newcommand\artchapter{%
  \ClassError{jmlr}{Chapters not permitted in articles}{}}
\chapter The default assumes a stand-alone document.
\let\chapter\artchapter

Label for the chapter entries in the toc.
\def\@chaptoclabel{chapter}
\@chapter Numbered chapters
\def\@chapter[#1]#2{\ifnum \c@secnumdepth >\m@ne
  \refstepcounter{chapter}\
  \if@mainmatter
    \typeout{\@chapapp\space\@chapapp\space\thechapter.}\
    \addcontentsline{toc}{\@chaptoclabel}{\protect\numberline{\thechapter}#1}\
  \else
    \addcontentsline{toc}{\@chaptoclabel}{#1}\
  \fi
  \else
  \addcontentsline{toc}{\@chaptoclabel}{#1}\
  \fi
  \chaptermark{#1}\
  \addtocontents{lof}{\protect\addvspace{10\p@}}\
  \addtocontents{lot}{\protect\addvspace{10\p@}}\
  \if@twocolumn
    \@topnewpage[\@makechapterhead{#2}]\
  \else\
    \@makechapterhead{#2}\
    \@afterheading\
  \fi}
\chaptertitleformat Formats the chapter title
\newcommand{\chaptertitleformat}[1]{\Huge\bfseries#1}
\chapternumberformat Formats the chapter number
\newcommand{\chapternumberformat}[1]{\huge\bfseries \@chapapp\space#1\par
\noindent\vskip 20\p@}
\chapterformat Overall format for chapter headings
\newcommand*{\chapterformat}{\raggedright}
Vertical gap after chapter heading
\newlength{postchapterskip}
\setlength{postchapterskip}{40pt}

Vertical gap before chapter heading
\newlength{prechapterskip}
\setlength{prechapterskip}{50pt}

Chapter heading for numbered chapters
\def\@makechapterhead#1{% 
  \null\vskip\prechapterskip
  \parindent \z@ \normalfont\chapterformat
  \ifnum \c@secnumdepth >\m@ne
    \chapternumberformat{\thechapter}%
  \fi
  \interlinepenalty\@M
  \chaptertitleformat{#1}\par
  \vskip \postchapterskip
}%

Unnumbered chapters.
\def\@schapter#1{\if@twocolumn
  \@topnewpage[@@makeschapterhead{#1}]% 
\else
  \@makeschapterhead{#1}%
  \@afterheading
\fi}

Layout for unnumbered chapter headings
\def\@makeschapterhead{\if@twocolumn
  \@topnewpage[@@makeschapterhead{#1}]%
\else
  \@makeschapterhead{#1}%
  \@afterheading
\fi}

Format for chapter entry in toc
\newcommand\l@chapter[2]{% 
  \ifnum \c@tocdepth >\m@ne
    \addpenalty{-@highpenalty}%
  \fi
  \vskip 1.0em \setlength{\@tempdima}{1.5em}%
  \begingroup
    \parindent \z@ \rightskip @pnumwidth
  \endgroup
}
\@appendix Make appendix entries in the toc the same as that for chapters by default
\let\@appendix\@chapter

\chaptername Start the front matter (in book)
\newcommand\chaptername{Chapter}

\frontmatter Start the main matter (in book)
\newcommand\mainmatter{%
  \cleardoublepage
  \@mainmatterfalse
  \renewcommand*{\theHchapter}{front-\thechapter}%
  \pagenumbering{roman}%
  \morefrontmatter
}%
\newcommand\morefrontmatter{}

\backmatter Start the back matter (in book)
\newcommand\backmatter{%
  \if@openright
    \cleardoublepage
  \else
    \clearpage
  \fi
  \@mainmatterfalse
}%
\newcommand*{\booktocpreamble}{}

\booktocpreamble
This is for the main table of contents when using the combine class file, and is not for use in individual articles.

Table of contents for individual articles.

A part in an article

A part in a book forming a collection of articles
\thispagestyle{plain}%
\if@twocolumn
\onecolumn
\@tempswatrue
\else
\@tempswafalse
\fi
\preparthook
\secdef\@bookpart\@sbookpart}

parttitleformat  Format of the title for a part (in a book)
@bookpart
\newcommand{\parttitleformat}{[1]{{
\Huge\bfseries#1\%
}}}

Part labels
@partapp
\newcommand*{\@parttoclabel}{part}

\parnumberformat  Format of the part number (in a book)
\newcommand{\parnumberformat}{[1]{{
\Huge\bfseries \@partapp\nobreakspace#1\par
\vskip 20\p@}}}

\preparthook  Hook at the start of a part (in a book)
\newcommand{\preparthook}{\null\vfil}

\partformat  Overall format of part
@bookpart
\newcommand{\partformat}{\centering}

\@bookpart  Numbered book part format
@bookpart
\newcommand{\@bookpart}[1]{[2]{%
\ifnum c@secnumdepth >-2\relax
\refstepcounter{part}\%
\addcontentsline{toc}{\@parttoclabel}{\protect\numberline{#1}#1\%
\else
\addcontentsline{toc}{\@parttoclabel}{#1\%
\fi
\markboth{}{}
\interlinepenalty \@M
\normalfont\partformat
\ifnum c@secnumdepth >-2\relax
\partnumberformat{#1}\%
\fi
\parttitleformat{\par}%%
\postparthook
}
Unnumbered book part format
\def\@bookpart#1{%
  \interlinepenalty \@M
  \normalfont partformat
  \parttitleformat{#1}\par
}\postparthook

Hook after part heading
\def\postparthook{\vfil\newpage
  \if@twoside
    \if@openright
      \null
    \fi
  \fi
  \if@tempswa
    \twocolumn
  \fi}

Switch to appendices in book
\newcommand\bookappendix{\par
  \setcounter{table}{0}\%
  \setcounter{figure}{0}\%
  \zeroextracounters
  \par
  \gdef\theHchapter{Alph {chapter}}%
  \xdef\Hy@chapapp{\Hy@appendixstring}
  \setcounter{chapter}{0}\%
  \setcounter{section}{0}\%
  \gdef\@chapapp{appendixname}%
  \gdef\thechapter{\@Alph\c@chapter}%
  \let\@write@jmlr@import=\@@write@jmlr@apdimport%
  \csname appendixmore\endcsname
}

Define commands to switch between book/article modes
\jmlrbookcommands Switch to book commands
\newcommand*{\jmlrbookcommands}{%\let\part\bookpart
  \let\chapter\bookchapter
  \let\appendix\bookappendix
  \let\tableofcontents\booktableofcontents
  \def\thesection{thechapter.\arabic{section}}%
}

\jmlarticlecommands Switch to article commands
\newcommand*{\jmlarticlecommands}{%
Check for packages that are known to cause problems when combining articles into a book.

\@check@packages
\newcommand*{\@jmlr@check@packages}{}% 
\ifpackageloaded{epsfig}{}%  
   \ClassError{jmlr}{Obsolete package \texttt{epsfig} detected.\MessageBreak  
      Please use \texttt{\string\includegraphics\space} to include images\MessageBreak  
      instead}{}}}%  
\ifpackageloaded{psfig}{}%  
   \ClassError{jmlr}{Obsolete package \texttt{psfig} detected.\MessageBreak  
      Please use \texttt{\string\includegraphics\space} to include images\MessageBreak  
      instead}{}}}%  
\ifpackageloaded{subfig}{}%  
   \ClassError{jmlr}{Package \texttt{subfig} detected.\MessageBreak  
      This will cause a conflict if the article is incorporated\MessageBreak  
      into a book using jmlbook.cls.\MessageBreak  
      Please use \texttt{\string\subfigure\space} and \texttt{\string\subtable\space} instead}{}}}%  
\ifpackageloaded{theorem}{}%  
   \ClassError{jmlr}{Package \texttt{theorem} detected.\MessageBreak  
      This can cause a conflict with other packages used by jmlr}{}}}%  
\ifpackageloaded{ntheorem}{}%  
   \ClassError{jmlr}{Package \texttt{ntheorem} detected.\MessageBreak  
      This can cause a conflict with other packages used by jmlr}{}}}%  
\ifpackageloaded{amsthm}{}%  
   \ClassError{jmlr}{Package \texttt{amsthm} detected.\MessageBreak  
      This package conflicts with the jmlr class}{}}}%  
\ifpackageloaded{pdfpages}{}%  
   \ClassError{jmlr}{Package \texttt{pdfpages} detected.\MessageBreak  
      This can cause a problem for jmlrbook}{}}}%  
\ifpackageloaded{geometry}{}%  
   \ClassError{jmlr}{Package \texttt{geometry} detected.\MessageBreak  
      This can cause a problem for jmlrbook}{}}}%  
\ifpackageloaded{tabularx}{}%  
   \ClassError{jmlr}{Package \texttt{tabularx} detected.\MessageBreak  
      This will break footnote links}{}}}%  
\ifpackageloaded{jmlr2e}{}%  
   \ClassError{jmlr}{Package \texttt{jmlr2e} detected.\MessageBreak  
      This can’t be used with the jmlr class}{}}}%
Don’t check for potentially problematic packages. (If I find this in any paper sent to me for inclusion in a book, it will annoy me.)

Discourage authors from using obsolete commands:

\bf \renewcommand*{\bf}{\obsoletefontcs{bf}}
\it \renewcommand*{\it}{\obsoletefontcs{it}}
\sc \renewcommand*{\sc}{\obsoletefontcs{sc}}
\rm \renewcommand*{\rm}{\obsoletefontcs{rm}}
\sf \renewcommand*{\sf}{\obsoletefontcs{sf}}
\tt \renewcommand*{\tt}{\obsoletefontcs{tt}}
Check for pseudocode package since it conflicts with the algorithm package and quite often both packages are used in the same book or proceedings.

\providecommand*{\jmlrcheckforpseudocode}{{\ifpackageloaded{pseudocode}\%
\let\pseudoRETURN\RETURN
\let\pseudoTRUE\TRUE
\let\pseudoFALSE\FALSE
\let\pseudoAND\AND
\let\pseudoOR\OR
\let\pseudoNOT\NOT
\let\pseudoTO\TO
\let\pseudoCOMMENT\COMMENT
\let\pseudoIF\IF
\let\pseudoELSE\ELSE
\let\pseudoFOR\FOR
\let\pseudoFORALL\FORALL
\let\pseudoWHILE\WHILE
\let\pseudoREPEAT\REPEAT
\let\pseudoUNTIL\UNTIL
\let\pseudoENDFOR\ENDFOR
\let\RETURN\undefined
\let\TRUE\undefined
\let\FALSE\undefined
\let\AND\undefined
\let\OR\undefined
\let\NOT\undefined
\let\TO\undefined
\let\COMMENT\undefined
\let\IF\undefined
\let\ELSE\undefined
\let\FOR\undefined
\let\FORALL\undefined
\let\WHILE\undefined
\let\REPEAT\undefined
\let\UNTIL\undefined
\let\ENDFOR\undefined
\pretocmd\pseudocode{\let\RETURN\pseudoRETURN\let\TRUE\pseudoTRUE\let\FALSE\pseudoFALSE\let\AND\pseudoAND\let\OR\pseudoOR\let\NOT\pseudoNOT\let\TO\pseudoTO\let\COMMENT\pseudoCOMMENT\let\IF\pseudoIF\let\ELSE\pseudoELSE\let\FOR\pseudoFOR\%
\else\%
\fi}}
Class file for books composed of articles using the jmlr class.

Declare class:
\ProvidesClass{jmlrbook}[2020/01/31 v1.26 (NLCT) JMLR Book Style]

Need xkeyval package to have key=value class options
\RequirePackage{xkeyval}

Requires double spacing for the title page
\RequirePackage{setspace}

Path used to determine if the preface is in the main document or in a separate file.
\newcommand*{\jmlrprefacepath}{}

The fink package is now deprecated, so only use it if currfile isn't installed.
\IfFileExists{currfile.sty}\
{\RequirePackage{currfile}\
  \renewcommand*{\jmlrprefacepath}{\currfilepath}}\
\{\
  \RequirePackage{fink}\
  \ifdef\finkpath\
  {\renewcommand*{\jmlrprefacepath}{\finkpath}}\
  {fink version too old.\
    \ClassWarning{jmlrbook}{Install ‘currfile’ package or update ‘fink’ package}}\
\}\
\jmlrprefacepath
Some packages need to be loaded before hyperref so provide a hook to do this:

\providecommand*{\jmlrprehyperref}{}

\ifgrayscale Determine whether to select color or grayscale

\newif{\ifgrayscale}
\grayscalefalse

\DeclareOptionX{draft}{\setlength{\overfullrule}{5pt}}
\DeclareOptionX{final}{\setlength{\overfullrule}{0pt}}
\DeclareOptionX{color}{\grayscalefalse}
\DeclareOptionX{gray}{\grayscaletrue}

Pass letterpaper and 7x10 to jmlr.

\DeclareOptionX{letterpaper}{\PassOptionsToClass{\CurrentOption}{jmlr}}
\DeclareOptionX{7x10}{\PassOptionsToClass{\CurrentOption}{jmlr}}

Pass html and nohtml to jmlr. (Used by makejmlrbookgui)

\DeclareOptionX{html}{\PassOptionsToClass{\CurrentOption}{jmlr}}
\DeclareOptionX{nohtml}{\PassOptionsToClass{\CurrentOption}{jmlr}}

\jmlrprefaceheader
\newcommand*{\jmlrprefaceheader}{%
\phantomsection
\chapter*{\prefacename}
\addcontentsline{toc}{chapter}{\prefacename}
\markboth{\prefacename}{\prefacename}
}%

Pass wcp, pmlr and nowcp options to jmlr and set preface header.

\DeclareOptionX{wcp}{%
\PassOptionsToClass{\CurrentOption}{jmlr}%
}%
Pass tablecaptiontop and tablecaptionbottom options to jmlr.

Pass font size commands to jmlr

Switch on two-side mode by default

Process options
If \texttt{jmlrgrayscale} has been defined, let it override the class options. If it is defined, it should be set to 0 for the online version and any other number for the grayscale print version.

\begin{verbatim}
\ifundefined{jmlrgrayscale}{}\
\ifnum\jmlrgrayscale=0\relax\grayscalefalse\else\grayscaletrue\fi
\end{verbatim}

This next bit is a modification of pdfx. It's only used for the print version when the pdfxa option is used.

\begin{verbatim}
\ifgrayscale
\newcommand*{\jmlrwritepdfinfo}{\protected@write\@auxout{}}{\string\jmlrbook@info{\xmpAuthor}{\xmpTitle}}
\fi
\ifjmlrpdfxa
\def\convertDate\getYear
\def\getYear D:#1#2#3#4{\edef\xYear{#1#2#3#4}\getMonth}
\def\getMonth#1#2{\edef\xMonth{#1#2}\getDay}
\def\getDay#1#2{\edef\xDay{#1#2}\getHour}
\def\getHour#1#2{\edef\xHour{#1#2}\getMin}
\def\getMin#1#2{\edef\xMin{#1#2}\getSec}
\def\getSec#1#2{\edef\xSec{#1#2}\getTZh}
\catcode'Z=12
\gdef\tmpz{Z}
\def\hash{\expandafter\@gobble\string\#}
\def\amp{\expandafter\@gobble\string\&}
\def\xmpAmp{\amp\hash x0026;}
\def\sep{</rdf:li><rdf:li>}
\def\TextCopyright{\amp\hash x00A9;}
\def\Title#1{\gdef\xmpTitle{#1}}
\def\Author#1{\gdef\xmpAuthor{#1}}
\def\Keywords#1{\gdef\xmpKeywords{#1}}
\let\xmpKeywords\@empty
\def\Creator#1{\gdef\xmpCreator{#1}}
\def\xmpCreator{pdfTeX}
\def\Volume#1{\gdef\xmpVolume{#1}}
\let\xmpVolume\@empty
\def\Issue#1{\gdef\xmpIssue{#1}}
\let\xmpIssue\@empty
\def\xmpSubject\xmpKeywords
\def\Creator#1{\gdef\xmpCreator{#1}}
\def\xmpCreator{pdfTeX}
\def\Volume#1{\gdef\xmpVolume{#1}}
\let\xmpVolume\@empty
\def\Issue#1{\gdef\xmpIssue{#1}}
\let\xmpIssue\@empty
\end{verbatim}

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This is a modification of the command from pdfx that also works for zero and negative hours.
\getTZm  This is a modified version of the command from pdfx.
\def\getTZhm#1#2'#3#4'{%
  \edef\xTZh{#1#2}  \\
  \edef\xTZm{#3#4}  \\
  \doConvDate \\
}\doConvDate  Defines the date using information derived from parsing /pdfcreationdate
\def\doConvDate{%  \\
  \edef\convDate{\xYear-\xMonth-\xDay T\xHour:}\xMin:}\xSec\xTZsign\xTZh:\xTZm}%  \\
\@pre@hyperref  This macro contains a trimmed down version of pdfx.
\newcommand{\@pre@hyperref}{%  \\
  \IfFileExists{FOGRA39L.icc}{}{  \\
    \pdfminorversion=3  \\
    \pdfpageattr{/MediaBox[0 0 595 793]  \\
      /BleedBox[0 0 595 793]  \\
      /TrimBox[25 20 570 773]}%  \\
    \findUUID{\jobname.pdf}  \\
    \edef\xmpdocid{\uuid}  \\
    \findUUID{\pdfcreationdate}  \\
    \edef\xmpinstid{\uuid}  \\
    \InputIfFileExists{\jobname.xmpdata}{}{}%  \\
    \RequirePackage{xmpincl}  \\
    \expandafter\convertDate\pdfcreationdate  \\
    \def\@pctchar{\expandafter\@gobble\string\%}  \\
    \def\@bchar{\expandafter\@gobble\string\\}  \\
    \immediate\pdfobj stream attr{/N 4} file{FOGRA39L.icc}  \\
    \edef\OBJ@CVR{\the\pdflastobj}  \\
    \pdfcatalog{/OutputIntents [  \\
      /Type/OutputIntent  \\
      /S/GTS_PDFX  \\
      /OutputCondition (FOGRA39)  \\
      /OutputConditionIdentifier (FOGRA39 \@bchar(ISO Coated v2  \\
        300)@pctchar space \@bchar(ISO 144 @bchar)@bchar  \\
      )  \\
      /DestOutputProfile \OBJ@CVR\space 0 R  \\
      /RegistryName(http://www.color.org)  \\
    ]}  \\
    \input glyphtounicode.tex  \\
    \input glyphtounicode-cmr.tex  \\
    \pdfgentounicode=1  \\
  }
\RequirePackage[draft, pdftex, pdffagemode=UseNone, bookmarks=false]{hyperref}
{\
\ClassError{jmlrbook}{Can't find 'FOGRA39L.icc'}\
\{Download ISOcoated\string_v2\string_330\string_bas.icc from\
\http://www.colormanagement.org/en/isoprofile.html\
\Rename it FOGRA39L.icc and put it in the pdfx folder\
\}}\
\renewcommand*{\jmlrwritepdfinfo}{\
\begingroup\
\let\&=\xmpAmp\
\IfFileExists{pdfx-1a.xmp}{\
\pdfcompresslevel=0\
\immediate\pdfobj stream attr {/Type /Metadata /Subtype /XML}\
file{pdfx-1a.xmpi}\
\pdfcatalog{/Metadata \the\pdflastobj\space 0 R}\
}\
\endgroup\
\protected@write\@auxout{}{\string\jmlrbook@info{\xmpAuthor}{\xmpTitle}}\
\pdfinfo{\
\Author{\xmpAuthor}\%\
\Title{\xmpTitle}\%\
\Creator{\xmpProducer}\%\
\CreationDate{\convDate}\%\
\ModDate{\convDate}\%\
\Producer{\xmpProducer}\%\
\Trapped /False\
\GTS_PDFXVersion (PDF/X-1:2001)\%\
\GTS_PDFXConformance (PDF/X-1a:2001)\%\
}\
\fi\
}\else\
\newcommand*{\jmlrwritepdfinfo}{\%\
\jmlrbook@info Not needed (information provided for MakeJmlrBookGUI)\
\jmlrbook@location Not needed (information provided for MakeJmlrBookGUI)\
\@post@hyperref{\%\
\let\@org@c@lenddoca\c@lenddoca\
\let\c@lenddoca\undefined\%\
\jmlrbook@info Not needed (information provided for MakeJmlrBookGUI)\
\jmlrbook@location Not needed (information provided for MakeJmlrBookGUI)\
\@post@hyperref{\%\
\let\@org@c@lenddoca\c@lenddoca\
\let\c@lenddoca\undefined\}?}{
Load combine class. This requires a little bit of trickery.

\let\@org@LoadClass\LoadClass
\let\LoadClass\@org@LoadClass\@org@LoadClass{jmlr}
\@org@LoadClass{combine}
\let\c@lenddoca\@org@c@lenddoca

Requires combinat to work with natbib:
\RequirePackage{combinat}

Need to apply a patch to combinat (this has now been fixed in combinat, but user might be using an old version):
\renewcommand\c@laNAT@parse[1]{{%
\let\protect=\@unexpandable@protect\let~\relax
\let\active@prefix=\@gobble
\xdef\NAT@temp{\csname b@#1\@extra@b@citeb\endcsname}}%
\expandafter\NAT@split\NAT@temp?????@@%
\expandafter\NAT@parse@date\NAT@date??????@@%
\ifciteindex\NAT@index\fi%
%}
\renewcommand\c@lbNAT@parse[1]{{%
\let\protect=\@unexpandable@protect\let~\relax
\let\active@prefix=\@gobble
\xdef\NAT@temp{\csname B?\jobname?@#1\@extra@b@citeb\endcsname}}%
\expandafter\NAT@split\NAT@temp?????@@%
\expandafter\NAT@parse@date\NAT@date??????@@%
\ifciteindex\NAT@index\fi%
%
Start new chapters on the right hand page:
\newif\if@openright
\@openrighttrue
\newif\if@mainmatter
\Define commands that affect the formatting:
\pagerule\par

\newcommand\pagerule[1][0pt]{\par
\noindent\rule[\l#1]{\linewidth}{2pt}\par}

\preface The preface environment starts a new chapter but also writes information to the main aux file for makejmlrbook. The optional argument is the file name for the extracted preface.
\ifjmlrhtml
\newenvironment{preface}[1][preface]%}
{%
\noindent\noindent\HCode{<h2>\prefacename</h2>}%
}
\else
\newenvironment{preface}[1][preface]%
{%
\if\ifjmlrhtml
\newcommand*{\pagerule}[1][0pt]{\par
\noindent\rule[\l#1]{\linewidth}{2pt}\par}

\preface The preface environment starts a new chapter but also writes information to the main aux file for makejmlrbook. The optional argument is the file name for the extracted preface.
\ifjmlrhtml
\newenvironment{preface}[1][preface]%}
{%
\noindent\noindent\HCode{<h2>\prefacename</h2>}%
}
\else
\newenvironment{preface}[1][preface]%
{%
\if\ifjmlrhtml
\newcommand*{\pagerule}[1][0pt]{\par
\noindent\rule[\l#1]{\linewidth}{2pt}\par}

\preface The preface environment starts a new chapter but also writes information to the main aux file for makejmlrbook. The optional argument is the file name for the extracted preface.
\ifjmlrhtml
\newenvironment{preface}[1][preface]%}
{%
\noindent\noindent\HCode{<h2>\prefacename</h2>}%
}
\else
\newenvironment{preface}[1][preface]%
{%
\if\ifjmlrhtml
\newcommand*{\pagerule}[1][0pt]{\par
\noindent\rule[\l#1]{\linewidth}{2pt}\par}

\preface The preface environment starts a new chapter but also writes information to the main aux file for makejmlrbook. The optional argument is the file name for the extracted preface.
\ifjmlrhtml
\newenvironment{preface}[1][preface]%}
{%
\noindent\noindent\HCode{<h2>\prefacename</h2>}%
}
\else
\newenvironment{preface}[1][preface]%
{%
\if\ifjmlrhtml
\newcommand*{\pagerule}[1][0pt]{\par
\noindent\rule[\l#1]{\linewidth}{2pt}\par}

\preface The preface environment starts a new chapter but also writes information to the main aux file for makejmlrbook. The optional argument is the file name for the extracted preface.
\ifjmlrhtml
\newenvironment{preface}[1][preface]%}
{%
\noindent\noindent\HCode{<h2>\prefacename</h2>}%
}
\else
\newenvironment{preface}[1][preface]%
{%
\if\ifjmlrhtml
\newcommand*{\pagerule}[1][0pt]{\par
\noindent\rule[\l#1]{\linewidth}{2pt}\par}
\jmlrprefaceheader
\protected@write\@mainauxout{\string\@prefacestart{\thepage}\{\arabic{page}\}}%
\protected@write\@mainauxout{\string\@prefacefile{\jmlrprefacepath}{#1}}%
\protect\write\@mainauxout{\string\@prefaceend{\thepage}}%
}\fi
\prefacename
\newcommand*{\prefacename}{Preface}
\@prefacefile
\newcommand*{\@prefacefile}{[2]{}}
\@prefacestart
\newcommand*{\@prefacestart}{[2]{}}
\@prefaceend
\newcommand*{\@prefaceend}{[1]{}}
\@prefaceeditor
\newcommand*{\@prefaceeditor}{[1]{}}

Cross-reference chapters:
\chapterref
\newcommand*{\chapterref}{[1]{\objectref{#1}{\chapterrefname}{\chaptersrefname}{}}{}}

Cross-referencing imported articles:
\articlepageref
\newcommand*{\articlepageref}{[1]{\pageref{#1jmlrstart}}{}}
\articlepagesref
\newcommand*{\articlepagesref}{[1]{\pageref{#1jmlrstart}--\pageref{#1jmlrend}}{}}
\@articlepagesref
\newcommand*{\@articlepagesref}{[1]{\pageref{jmlrstart}--\pageref{jmlrend}}{}}
\jmlrissue
\newcommand*{\issue}{\jmlrissue}
\newcommand*{\issue}[1]{\renewcommand*{\issue}{#1}}
\ifjmlrpdr
\let\xmpIssue\issue
\fi
\thejmlrworkshop Provided in the event that it's required for the title page.
\newcommand*{\thejmlrworkshop}{\jmlrworkshop}
\team
\newcommand*{\team}{\jmlrteam}
\newcommand*{\team}[1]{\renewcommand*{\team}{#1}}
\jmlrlocation
\newcommand*{\jmlrlocation}{\jmlrlocation}
\newcommand*{\jmlrlocation}[1]{\renewcommand*{\location}{#1}}
\productioneditorname
\newcommand*{\productioneditorname}{Production Editor}
\productioneditor
\newcommand*{\productioneditor}{\jmlrpd}
\newcommand*{\productioneditor}[1]{\renewcommand*{\productioneditor}{#1}}
\productioneditors
\newcommand*{\productioneditors}{\jmlrpd}
\newcommand*{\productioneditors}[1]{\renewcommand*{\productioneditors}{#1}}
\logo Title page image
\newcommand*{\logo}{\jmlrlogo}
\newcommand*{\logo}[2][2]{\renewcommand*{\logo}{#2}}
\ifjmlrhtml
\def\@logo@tmp{#1}
\ifx\@logo@tmp\@empty
\renewcommand*{\logo}{#2}
\else
\renewcommand*{\logo}{\HCode{<a href="#1">}#2\HCode{</a>}}
\fi
\else
\renewcommand*{\logo}{\HCode{<a href="#1">}#2\HCode{</a>}}
\fi

Provided for book production editors to fine tune the book line breaking.

Set article title

The book's title:

Make it easier to modify the book's title page:

Determine if the given element has been set:

\titlebody

\newcommand{\titlebody}{%  
  \SetTitleElement{title}{\maintitlefont}{\postmaintitle}  
  \SetTitleElement{volume}{\mainvolumefont}{\postmainvolume}  
  \SetTitleElement{subtitle}{\mainsubtitlefont}{\postmainsubtitle}  
  \SetTitleElement{logo}{\mainlogofont}{\postmainlogo}  
  \SetTitleElement{team}{\mainteamfont}{\postmainteam}  
  \SetTitleElement{author}{\mainauthorfont}{\postmainauthor}  
  \SetTitleElement{productioneditor}{\mainproductioneditorfont}{\postmainproductioneditor}  
}
Editorial team listed at the end of a preface etc. The mandatory argument is the date, the optional argument is the team title. Each editor should be separated with `\Editor`.

\begin{signoff}[2][The Editorial Team] %
\ifjmlrhtml
\def\Editor##1{##1\par\vskip\baselineskip\noindent\ignorespaces}\
\def\@editorialteam{#1}\
\def\@signoffdate{#2}\
\if\@signoffdate\@empty\
\else\
\emph{\@signoffdate}\nopagebreak\par\
\fi\
\fi\
\if\@editorialteam\@empty\
\else\
\@editorialteam:\nopagebreak\par
\fi\
\fi
\end{signoff} %
An author can sign off at the end of a chapter (such as a foreword). Each author should be separated with \Author.

\begin{tabular}{@{}p{\linewidth}@{}}
##1\end{tabular}

\par\vskip\baselineskip

\ifx\@signoffdate\@empty
\else
\emph{\@signoffdate}\par
\fi
\vskip\baselineskip

\ifx\@editorialteam\@empty
\else
\@editorialteam:\nopagebreak\par\vskip\baselineskip
\fi
\nopagebreak

\contentsname
\renewcommand*{\contentsname}{Table of Contents}

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\theHsection
\def\theHsection{\theHchapter.\thesection}
\def\theHsubsection{\theHchapter.\thesubsection}
\def\theHsubsubsection{\theHchapter.\thesubsubsection}
\def\theHparagraph{\theHchapter.\theparagraph}

\theHsubfigure
\def\theHsubfigure{\theHfigure.arabic{subfigure}}
\def\theHsubtable{\theHtable.arabic{subtable}}

\theHfootnote
\def\theHfootnote{\theHchapter.\alpha{footnote}}

\theHtable
\def\theHtable{\theHchapter.arabic{table}}

\theHfigure
\def\theHfigure{\theHchapter.arabic{figure}}

\theHalgocf
\def\theHalgocf{\theHchapter.\thealgocf}

\mailto
\renewcommand*{\mailto}[1]{% 
   \href{mailto:#1}{\nolinkurl{#1}}% 
}
\c@lhaschapterfalse
\let\c@lthesec\thesection

Make sure the hyperlinks work
\doimportchapterHref
\newcommand\doimportchapterHref{% 
   \edef@currentHref{chapter.\thechapter}% 
}

\toclevel@appendix
Set the toc level for the main appendices
\def\toclevel@appendix{-1}

hyperref and combine don't play nicely need to fudge the cross-referencing a bit.

\Xprefix
\def\Xprefix{ }

\Xref
\DeclareRobustCommand\Xref{\@ifstar\@Xrefstar\T@Xref}%
\begingroup
\@onelevel@sanitize\@currentlabelname
\edef\@currentlabelname{% 
\expandafter\strip@period\@currentlabelname.\relax\@@@
}%
\protected@write\@mainauxout{}{\string\newlabel{\Xprefix#1}{\@currentlabel}{\thepage}{\@currentlabelname}{\@currentHref}{}}%
\endgroup
\@esphack
\let\ltx@label\Xlabel
\@secondoffive
Something's redefining \@secondoffive incorrectly at the start of the document when hyperref's draft mode is on. Need to fix it.
\AtBeginDocument{\renewcommand\@secondoffive[5]{#2}}
\jmlrwritepdfinfo
\let\jmlrwritepdfinfo\relax
\let\ReadBookmarks\relax

Need to write imported chapter label to main auxfile.

\@setimportlabel
\def\@setimportlabel{% 
\let\@mainauxout\@auxout \let\HRlabel\label
%}
\AtBeginDocument{\@jmlrbegindoc}
\@jmlrbegindoc
\newcommand*\@jmlrbegindoc{\@setimportlabel
%\let\@mainauxout\@auxout \let\HRlabel\label
%}
\@setimportlabel
\def\@setimportlabel{% 
\let\@mainauxout\@auxout \let\HRlabel\label
%}
\AtBeginDocument{\@jmlrbegindoc}
\@jmlrbegindoc
Patch to work with auxhook if loaded
\ifundefined{@beginmainauxhook}{\@beginmainauxhook}\}

Imported papers modify \InputIfFileExists so save original definition.
\let\@org@InputIfFileExists=\InputIfFileExists

\newenvironment{jmlrpapers}{
\def\@begindocumenthook{\@jmlrbegindoc
\let\bibcite\c@lbNATbibcite
}\def\@enddocumenthook{\@jmlrenddoc
\let\bibcite\c@lbNAT@testdef
\begin{papers}[]
\if@twocolumn
\def\@jmlr@restore{\twocolumn}%
\else
\def\@jmlr@restore{\onecolumn}%
\fi
\jmlrarticlecommands
\let\importpubpaper\@importpubpaper
\let\importpaper\@importpaper
\let\importarticle\@importarticle
\let\label\Xlabel
\let\ref\Xref
\pagestyle{article}%
}{\@jmlr@restore
\end{papers}
}\addtomaincontents
\newcommand*{\addtomaincontents}[2]{
\protected@write\@mainauxout{\let\label\@gobble\let\index\@gobble}{\string\@writefile{#1}{#2}}%
}\@write@author
\newcommand*{\@write@author}[2]{
\def\@jmlr@authors@sep{ and }%
\protected@write\@mainauxout{\let\label\@gobble}{\string\@new@articleauthor{#1}{#2}}%
\@write@author
\newcommand*{\@write@author}[2]{
\def\@jmlr@authors@sep{ and }%
\protected@write\@mainauxout{\let\label\@gobble}{\string\@new@articleauthor{#1}{#2}}
}
The accompanying makejmlrbook Perl script scans the aux file for information. Any articles imported using \importpubpaper, \importpaper or \importarticle need to write the relevant information to the aux file.

\@jmlr@import  \LaTeX should ignore \@jmlr@import as it's only needed for makejmlrbook:
\newcommand*{\@jmlr@import}[3]{%}

\@jmlr@apdimport  As above but for files imported in the appendix. \LaTeX should ignore \@jmlr@apdimport as it's only needed for makejmlrbookgui:
\newcommand*{\@jmlr@apdimport}[3]{%}

\@write@jmlr@import  Initialise to \@@write@jmlr@import and switch to \@@write@jmlr@apdimport in the appendices.
\def\@write@jmlr@import{\@@write@jmlr@import}

remaketitlehook  Redefine \jmlrpremaketitlehook
\def\jmlrpremaketitlehook{%
\cleardoublepage
\phantomsection
\let\@currentlabelname\@shorttitle
\refstepcounter{chapter}%
}%

\jmlrimporthook  Hook just before document is imported.
\newcommand*{\jmlrimporthook}{%}

\importpubpaper  Import a document that has already been published. Syntax: \importpubpaper[\langle label\rangle] \langle (dir)\rangle\langle (file)\rangle\langle (pages)\rangle where \langle dir\rangle is the directory in which the paper is located, \langle file\rangle is the name of the file and \langle pages\rangle indicates the page range for the original version. The optional argument is a label. This is used to prefix the labels and citations in the document so they don't clash with other imported articles. If omitted, \langle dir\rangle/\langle file\rangle is used instead.
\newcommand*{\@importpubpaper}[4][\@importdir\@importfile]{%
\importpaper  Like \importpubpaper but sets the pages to the page-range for this book.

\newcommand{\importpaper}[3][\@importdir\@importfile]{%
\bgroup
\def\@importdir{#2/}\
\def\@importfile{#3}\
@write@jmlr@import{#1}{#2}{#3}\
\def\@extra@b@citeb{#1}\
\def\@extra@binfo{#1}\
\jmlrpages{\protect\@articlepagesref}\
\graphicspath{{\@importdir}}\
\jmlrmaketitlehook{%
\label{}
\def\titlebreak{ }%
\addtomaincontents{toc}%
%
\protect\contentsline{papertitle}{\@title}{\thepage}%
\protect\contentsline{page}{\@articlepagesref}{% }%
\pdfbookmark{\@shorttitle}{chapter\@label}{chapter.\theHchapter}%%
\def@jmlr@authors@sep{ \& }%
\tocchapterpubauthor{}%
%
% \@jmlr@authors@sep{ \& }%
% \@jmlr@authors@sep{ \& }%
%
% \@jmlr@authors@sep{ \& }%
% \@jmlr@authors@sep{ \& }%
%
% \@jmlr@authors@sep{ \& }%
% \@jmlr@authors@sep{ \& }%
%
% \@jmlr@authors@sep{ \& }%
% \@jmlr@authors@sep{ \& }%
%
% \@jmlr@authors@sep{ \& }%
% \@jmlr@authors@sep{ \& }%
%
% \@jmlr@authors@sep{ \& }%
% \@jmlr@authors@sep{ \& }%
\def\InputIfFileExists##1##2##3{\IfFileExists{##1}{\org\InputIfFileExists{##1}{##2}{##3}}{\org\InputIfFileExists{\importdir##1}{##2}{##3}}}\def\Xprefix{#1}\let\jmlrvolume\@gobble\let\jmlryear\@gobble\let\jmlrworkshop\@gobble\let\jmlrissue\@gobble\let\jmlrpages\@gobble\jmlrimporthook\import{\importdir\importfile}\def\Xprefix{}\egroup\gdef\@shortauthor{}\gdef\@shorttitle{}\gdef\@firstauthor{}\gdef\@jmlr@authors{\@jmlrauthors}\gdef\@jmlrauthors{}\gdef\@firstsurname{}\newcommand{\importpaper}[3]{\ClassError{jmlrbook}{\string\importpaper\space not permitted outside \string\jmlrpapers\ environment}}{\importarticle[\label]{\dir}{\file}} where \dir is the directory in which the paper is located and \file is the name of the file. The optional argument is a label. This is used to prefix the labels and citations in the document so they don’t clash with other imported articles. If omitted, \file is used instead.
\newcommand{\importarticle}[3]{%\ClassError{jmlrbook}{\string\importarticle\space not permitted outside ‘jmlrpapers’ environment}{%}
}

\addtocpart Add a part to the TOC without printing anything in the text (but does a \cleardoublepage).
\newcommand{\addtocpart}[1]{%\cleardoublepage \refstepcounter{tocpart} \addtocontents{toc}{\protect\tocpart{#1}} \pdfbookmark[-1]{#1}{part.\thetocpart} %}
\newcounter{tocpart}
\addtocpart
\newcommand{\tocpart}[1]{%\addpenalty{-\@highpenalty} \vskip 1.0ex \@plus\p@ \setlength{\@tempdima}{2.25em} \begingroup \parindent \z@ \rightskip \@pnumwidth \parfillskip -\@pnumwidth \leavevmode \large\bfseries \advance{\leftskip}{\@tempdima} \hskip -\leftskip \#1
nobreak \hfil nobreak\hb@xt@\@pnumwidth{\null}\par \penalty{\@highpenalty} \endgroup}
\addtocpart
\setlength{\prechapterskip}{3em}
\setlength{\postchapterskip}{20pt}
\chapternumberformat
\renewcommand{\chapternumberformat}{%\Large\bfseries \@chapapp \space #1 \par}
\chaptertitleformat
\renewcommand{\chaptertitleformat}{%\Large #1}
\chapterformat
\renewcommand*{\chapterformat}{%\raggedright}
\setlength{\prechapterskip}{3em}
\setlength{\postchapterskip}{20pt}
\setlength{\prechapterskip}{3em}
\setlength{\postchapterskip}{20pt}
\chapterformat
\renewcommand{\chapterformat}{%\raggedright}
\addtocpart
\newcommand{\addtocpart}[1]{%\cleardoublepage \refstepcounter{tocpart} \addtocontents{toc}{\protect\tocpart{#1}} \pdfbookmark[-1]{#1}{part.\thetocpart} %}
\newcounter{tocpart}
\addtocpart
\newcommand{\tocpart}[1]{%\addpenalty{-\@highpenalty} \vskip 1.0ex \@plus\p@ \setlength{\@tempdima}{2.25em} \begingroup \parindent \z@ \rightskip \@pnumwidth \parfillskip -\@pnumwidth \leavevmode \large\bfseries \advance{\leftskip}{\@tempdima} \hskip -\leftskip \#1
nobreak \hfil nobreak\hb@xt@\@pnumwidth{\null}\par \penalty{\@highpenalty} \endgroup}
\addtocpart
\setlength{\prechapterskip}{3em}
\setlength{\postchapterskip}{20pt}
\setlength{\prechapterskip}{3em}
\setlength{\postchapterskip}{20pt}
\chapterformat
\renewcommand{\chapterformat}{%\raggedright}
\addtocpart
\newcommand{\addtocpart}[1]{%\cleardoublepage \refstepcounter{tocpart} \addtocontents{toc}{\protect\tocpart{#1}} \pdfbookmark[-1]{#1}{part.\thetocpart} %}
\newcounter{tocpart}
\addtocpart
\newcommand{\tocpart}[1]{%\addpenalty{-\@highpenalty} \vskip 1.0ex \@plus\p@ \setlength{\@tempdima}{2.25em} \begingroup \parindent \z@ \rightskip \@pnumwidth \parfillskip -\@pnumwidth \leavevmode \large\bfseries \advance{\leftskip}{\@tempdima} \hskip -\leftskip \#1
nobreak \hfil nobreak\hb@xt@\@pnumwidth{\null}\par \penalty{\@highpenalty} \endgroup}
\addtocpart
\setlength{\prechapterskip}{3em}
\setlength{\postchapterskip}{20pt}
\setlength{\prechapterskip}{3em}
\setlength{\postchapterskip}{20pt}
\chapterformat
\renewcommand{\chapterformat}{%\raggedright}
\addtocpart
\newcommand{\addtocpart}[1]{%\cleardoublepage \refstepcounter{tocpart} \addtocontents{toc}{\protect\tocpart{#1}} \pdfbookmark[-1]{#1}{part.\thetocpart} %}
\newcounter{tocpart}
\addtocpart
\newcommand{\tocpart}[1]{%\addpenalty{-\@highpenalty} \vskip 1.0ex \@plus\p@ \setlength{\@tempdima}{2.25em} \begingroup \parindent \z@ \rightskip \@pnumwidth \parfillskip -\@pnumwidth \leavevmode \large\bfseries \advance{\leftskip}{\@tempdima} \hskip -\leftskip \#1
nobreak \hfil nobreak\hb@xt@\@pnumwidth{\null}\par \penalty{\@highpenalty} \endgroup}
\addtocpart
\setlength{\prechapterskip}{3em}
\setlength{\postchapterskip}{20pt}
\setlength{\prechapterskip}{3em}
\setlength{\postchapterskip}{20pt}
\chapterformat
\renewcommand{\chapterformat}{%\raggedright
Set up the format of a part in the book (not a part in an article).

\setpar
\renewcommand{\partnumberformat}{\Huge\bfseries \@partapp \nobreakspace #1\par
\vskip 20\p@}
\def\postparthook{%
\null
\thispagestyle{empty}%
\vfil
\newpage
\null
\thispagestyle{empty}%
\newpage}
\@curparthead
\newcommand{\@curparthead}{}
\renewcommand{\parttitleformat}{#1\gdef\@curparthead{\@partapp \space \thepart. #1}\@mkboth{\@curparthead}{\@curparthead}}
\renewcommand{\firstpageno}{}
\newcommand{\tocchapterauthor}{%#1}
\addtomaincontents{toc}{\protect\contentslines{chapterauthor}{#1}{}}%
\newcommand{\tocchapterpubauthor}{#1; #2.}%
\addtomaincontents{toc}{\protect\contentslines{chapterauthor}{#1; #2.}{}}%
\renewcommand{\@pnumwidth}{2em}
\part \renewcommand*{\part}[2]{%
  \ifnum \c@tocdepth > \m@ne
    \addpenalty{-\@highpenalty}%
    \vskip 1.0em \@plus \p@\%
    \setlength{\@tempdima}{5em}\%
    \settowidth{\@tempdima}{\large\bfseries @partapp\space MM}\%
    \vbox{\%
      \pagerule\%
      \begingroup\%
      \parindent \z@ \rightskip \@pnumwidth\%
      \parfillskip -\@pnumwidth\%
      \leavevmode \large\bfseries \%
      \advance\leftskip \@tempdima\%
      \hskip -\leftskip\%
      \renewcommand*{\numberline}[1]{\hb@xt@ \@tempdima\%
        {\@partapp\space ##1\hfil}}\%
      #1\nobreak \hfil \nobreak \hb@xt@ \@pnumwidth{\hss\%
        \normalfont\normalsize #2}\par\%
      \penalty\@highpenalty\%
      \endgroup\%
      \pagerule\%
    }\%
  \fi
}
\chapter
\renewcommand*{\chapter}[2]{%
  \ifnum\c@tocdepth > \m@ne
    \addpenalty{-\@highpenalty}%
    \vskip 1.0em \@plus \p@\%
    \setlength{\@tempdima}{2em}\%
    \begingroup\%
    \parindent \z@\%
    \rightskip \@pnumwidth\%
    \parfillskip -\@pnumwidth\%
    \leavevmode \large\bfseries \%
    \advance\leftskip \@tempdima\%
    \hskip -\leftskip\%
    \renewcommand*{\numberline}[1]{\hb@xt@ \@tempdima\%
      {##1\hfil}}\%
    #1\nobreak \hfil \nobreak \hb@xt@ \@pnumwidth{\hss\%
      \normalfont\normalsize #2}\par\%
    \penalty\@highpenalty\%
    \endgroup\%
  \fi
}
\frontmatter \newcommand*{\frontmatter}{%
Set up page styles

\firstpagehead
\newcommand{\firstpagehead}{}

\firstpagefoot
\newcommand{\firstpagefoot}{%\@reprint\hfill\thepage%
}

headfont  Set the header font
\newcommand*{\headfont}{\reset@font\small\scshape}%

footfont  Set the footer font
\newcommand*{\footfont}{\reset@font\small\itshape}%

\ps@chplain  Page style for first page of a chapter
\newcommand*{\ps@chplain}{%\let\@mkboth\@gobbletwo
\renewcommand*{\@oddhead}{\headfont\firstpagehead}
%\renewcommand*{\@evenhead}{}%
\renewcommand*{\@oddfoot}{\footfont\firstpagefoot}
%\renewcommand*{\@evenfoot}{\footfont\thepage\hfill %}
%}
\let\ps@plain\ps@chplain

\ps@article  Page style for the imported articles.
\newcommand*{\ps@article}{%\let\@mkboth\@gobbletwo
%\let\@evenfoot\@gobble
%\let\@oddfoot\@gobble
%\let\@evenhead\@gobble
%\let\@oddhead\@gobble
%\ps@plain
%}

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Title page style for imported articles (imported using \importarticle)
\renewcommand*{\@oddhead}{\headfont{shorttitle}}%
\renewcommand*{\@evenhead}{\headfont{shortauthor}}%
\renewcommand*{\@oddfoot}{\footfont{thepage}}%
\renewcommand*{\@evenfoot}{\footfont{thepage}}%

Page style for book
\newcommand*{\ps@jmlrbook}{%
    \let\@mkboth\@gobbletwo
    \renewcommand*{\@oddhead}{}%
    \renewcommand*{\@evenhead}{}%
    \def\@evenhead{\headfont{leftmark}}%
    \def\@oddhead{\headfont{rightmark}}%
    \let\@mkboth\markboth
    \renewcommand*{\sectionmark}[1]{}%
}

\markleft Provide a command to set just the left header mark.
\newcommand*{\markleft}[1]{%
    \begingroup
        \let\label\relax
        \let\index\relax
        \let\glossary\relax
        \expandafter\@markleft\@themark{#1}%
        \@temptokena{\@themark}%
        \mark{\the\@temptokena}%
    \endgroup
}

\morefrontmatter
\newcommand*{\morefrontmatter}{\pagestyle{jmlrbook}%

\chaptermark{}% 
\@mkboth{##1\hfill}{\hfill##1}

\moremainmatter

\renewcommand*{\moremainmatter}{\pagestyle{jmlrbook}% 
\def\chaptermark##1{% 
\@mkboth{\@curparthead}{\protect\thechapter. ##1}\% 
}}%

\bibsection
Set the bibliography headings in the articles
\renewcommand*{\bibsection}{\section*{\refname}}

Set up the book commands:
\jmlrbookcommands

In the event that authors have used different versions of \texttt{algorithm2e}, define old command names.
\providecommand*{\SetNoLine}{\SetAlgoNoLine}
\providecommand*{\SetVline}{\SetAlgoLined}
\providecommand*{\Setvlineskip}{\SetVlineSkip}
\providecommand*{\SetLine}{\SetAlgoLined}
\providecommand*{\dontprintsemicolon}{\DontPrintSemicolon}
\providecommand*{\printsemicolon}{\PrintSemicolon}
\providecommand*{\incmargin}{\IncMargin}
\providecommand*{\decmargin}[1]{\DecMargin{-#1}}
\providecommand*{\setnlskip}{\SetNlSkip}
\providecommand*{\Setnlskip}{\SetNlSkip}
\providecommand*{\setalcapskip}{\SetAlCapSkip}
\providecommand*{\setalcaphskip}{\SetAlCapHSkip}
\providecommand*{\nlSty}{\NlSty}
\providecommand*{\Setnlsty}{\SetNlSty}
\providecommand*{\Linesnumbered}{\LinesNumbered}
\providecommand*{\Linesnotnumbered}{\LinesNotNumbered}
\providecommand*{\Linesnumberedhidden}{\LinesNumberedHidden}
\providecommand*{\showln}{\ShowLn}
\providecommand*{\showlnlabel}{\ShowLnLabel}
\providecommand*{\nocaptionofalgo}{\NoCaptionOfAlgo}
\providecommand*{\restorecaptionofalgo}{\RestoreCaptionOfAlgo}
\providecommand*{\restylealgo}{\RestyleAlgo}
\providecommand*{\Titleofalgo}{\TitleOfAlgo}
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