

Formatting Instructions for Authors

AAAI Press

Association for the Advancement of Artificial Intelligence
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Abstract

AAAI creates proceedings, working notes, and technical reports directly from electronic source furnished by the authors. To ensure that all papers in the publication have a uniform appearance, authors must adhere to the following instructions.

Congratulations on having a paper selected for inclusion in an AAAI Press proceedings or technical report! This document details the requirements necessary to get your accepted paper published. Within the document, general guidelines are provided as applicable for using \LaTeX with `aaai.sty`, and also for using Microsoft Word. Beyond this document, AAAI cannot provide detailed guidance to you. We assume that you are expert in the use of your chosen formatting software, and that you can comply with the requirements as they are provided herein. Please review the entire document for specific instructions that might apply to your particular situation. All authors must comply with the following:

- You must use the latest AAAI Press Word template or \LaTeX macro (if you use some other formatting software, you must make your paper look exactly as it would using either Microsoft Word or \LaTeX).
- Download the author kit
- Complete, sign, and return by the deadline the AAAI Copyright form (proceedings authors) or distribution license (technical report authors).
- Read and format your paper source and PDF according to the formatting instructions for authors.
- Name your finished electronic files (including your PDF, your \LaTeX or Word source, and any enclosing directory or folder name) according to our naming convention (see the upload form for your event for specific naming instructions)
- Submit your electronic files and abstract using our electronic submission form **on time**.
- Submit your copyright form, and any required page or formatting charges to AAAI Press so that they are received by the deadline
- Check every page of your paper before submitting it

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Formatting Requirements in Brief

We need source and PDF files that can be used in a variety of ways and can be output on a variety of devices. AAAI imposes some requirements on your source and PDF files that must be followed. Most of these requirements are based on our efforts to standardize conference manuscript properties and layout. These requirements are as follows, and all papers submitted to AAAI for publication must comply:

- All fonts must be embedded in the PDF file
- No type 3 fonts may be used (even in illustrations)
- Your title must follow US capitalization rules
- \LaTeX documents must use the Times or Nimbus font package (do not use Computer Modern for the text of your paper)
- No \LaTeX 209 documents may be used or submitted.
- Fonts that require non-English language support (CID and Identity-H) must be converted to outlines or removed from the document. (The text may not be formatted in an Identity-H or CID font.)
- Two-column format in AAAI style is required for all papers
- The paper size for final submission must be US letter (for both \LaTeX and Word source as well as PDF)
- The document margins must be as specified in the formatting instructions.
- The number of pages and the file size must be as specified for your event.
- No document may be password protected
- Neither the PDFs nor the \LaTeX or Word source may contain embedded links or bookmarks (for example, `hyperref` may not be used in \LaTeX). Do not embed links (and turn off underlining and link color in Word) (`hyperref` is incompatible with `aaai.sty`)
- Your source and PDF must not have any page numbers, footers, or headers
- Your PDF must be distilled at 1,200 dpi or higher
- Your PDF must be compatible with Acrobat 5.

If you ignore any of the above requirements, it is likely that we will be unable to publish your paper.

Source Documents to Submit

If you used Microsoft Word, you must supply your “doc” file. If you used L^AT_EX, you must supply all your L^AT_EX source files, including (but not limited to) referenced style files, graphics files, bibliography files, (.bbl, .bst), dvi, .aux, and so forth. Your files should work without any supporting files (other than the program itself) on any computer. Place your PDF and source files in a single tar, zipped, gzipped, stuffed, or compressed archive. Follow the naming instructions (provided later) for the source files as well as the archive name. **Please do not send files that are not actually used in the paper.**

Using Microsoft Word to Format Your Paper

AAAI Press has provided several versions of a Word template that you can use to create your paper. You must be careful, however, not to change the page set-up of this document (print a PDF and use “shrink to fit” if you need to print it on A4 paper), and you will encounter problems if you use Identity-H or CID fonts. If your paper contains many in-line equations, and a significant amount of display mathematics, you may achieve better results using L^AT_EX, although the learning curve for this program is significantly higher. AAAI does not offer support in the use of Word.

Using L^AT_EX to Format Your Paper

If you are not an experienced L^AT_EX user, AAAI does **not** recommend that you use L^AT_EX to format your paper. No support for L^AT_EX is provided by AAAI, and these instructions and the accompanying style files are **not** guaranteed to work. If the results you obtain are not in accordance with the specifications you received, you must correct the style files or macro to achieve the correct result. AAAI **cannot** help you with this task. The instructions herein are provided as a general guide for experienced L^AT_EX users who would like to use that software to format their paper for an AAAI Press publication or report. These instructions are generic. Consequently, they do not include specific dates, page charges, and so forth. Please consult your specific written conference instructions for details regarding your submission.

Using the L^AT_EX Style File

The latest version of the AAAI style file is available on AAAI’s website. You should download this file and place it in a file named “aaai.sty” in the T_EX search path. Placing it in the same directory as the paper should also work. (We recommend that you download the complete author kit so that you will have the latest bug list and instruction set.)

Setting Up Your Paper in L^AT_EX In the L^AT_EX source for your paper, you **must** place the following lines (uncommented, except for setcounter) as shown in the example in this subsection.

This command set-up is for three authors. Add or subtract author and address lines as necessary. In most instances, this is all you need to do to format your paper in the Times font. The helvet package will cause Helvetica to be used for sans serif, and the courier package will cause Courier to be used

for the typewriter font. These files are part of the PSNFSS2e package, which is freely available from many Internet sites (and is often part of a standard installation).

Leave the setcounter for section number depth commented out and set at 0 unless you want to add section numbers to your paper. If you do add section numbers, you must uncomment this line and change the number to 1 (for section numbers), or 2 (for section and subsection numbers). The style file will not work properly with numbering of sub-subsections, so do not use a number higher than 2.

To add the required metadata for your paper, uncomment one of the two metadata sections. You should use the pdfmark code if your paper will be created using GhostScript. You should use the pdfinfo code if your paper will be created using PDF_TE_X.

```
\documentclass[letterpaper]{article}
\usepackage{aaai}
\usepackage{times}
\usepackage{helvet}
\usepackage{courier}
*****
% PDFMARK for TeX and GhostScript
% Uncomment and complete the following for metadata if
% your paper is typeset using TeX and GhostScript (e.g
% if you use .ps or .eps files in your paper):
% \special{! /pdfmark where
% {pop} {userdict /pdfmark /cleartomark load put} ifelse
% [ /Author (John Doe, Jane Doe)
% /Title (Paper Title)
% /Keywords (AAAI, artificial intelligence)
% /DOCINFO pdfmark}
*****
% PDFINFO for PDFTEX
% Uncomment and complete the following for metadata if
% your paper is typeset using PDFTEX
% \pdfinfo{
% /Title (Input Your Title Here)
% /Subject (Input The Proceedings Title Here)
% /Author (First Name, Last Name;
% First Name, Last Name;
% First Name, Last Name;)}
*****
% Uncomment if you want to use section numbers
% and change the 0 to a 1 or 2
% \setcounter{secnumdepth}{0}
*****
\title{Title}
\author{Author 1 \and Author 2 \and
Address line \and Address line
\and
Author 3 \and Address line \and Address line}
\begin{document}
\maketitle
...
\bibliography{Bibliography-File}
\bibliographystyle{aaai}
\end{document}
```

If you need additional assistance in setting up your paper (and you are using L^AT_EX2_ε), please read the Quick Guide to AAAI Style for L^AT_EX2_ε found in the author kit. You will also find additional information about fonts later on in this document.

Copyright

If you are required to transfer copyright of your paper to AAAI, you must include the AAAI copyright notice and web site address on all copies of your paper, whether electronic or paper. If you are not required to transfer copyright (for example, technical report authors), you need not include the copyright notice on your paper. An example of the copyright notice, which may be printed in 8 point type, is reproduced below. A signed, unaltered copyright form (or, if applicable, permission to distribute form) must be faxed to AAAI by the submission deadline, and the original must be mailed to the AAAI office. If you fail to send in a signed copyright or permission form, your paper will not be published. You will find PDF versions of the AAAI copyright and permission to distribute forms in the author kit.

L^AT_EX Copyright Notice

The copyright notice automatically appears if you use `aaai.sty`. If you are creating a technical report, it is not necessary to include this notice. You may disable the copyright line using the `\nocopyright` command. (However, if you disable this line and transfer of copyright is required, your paper will be returned to you.)

Word Copyright Notice

The copyright notice has been added to the Word template using an invisible, unnumbered footnote, appended to the example of a first-level heading. You should retain this footnote. Be sure the copyright date is correct. (If you disable this footnote and transfer of copyright is required, your paper will not be published.)

Margins and Paper Size

Papers must be formatted to print in two-column format on 8.5 x 11 inch US letter-sized paper. The margins must be exactly as follows:

- Top margin: .75 inches
- Left margin: .75 inches
- Right margin: .75 inches
- Bottom margin: 1.25 inches

Paper size and margins in Word are usually set in Page Setup. Please ensure that the document conforms to the previously listed measurements.

Paper Size in L^AT_EX

If you use L^AT_EX, it is quite likely that the default paper size is A4. Because we require that your electronic paper be formatted in US letter size, you will need to change the default back to US letter size. Assuming you are using the 2e version of L^AT_EX, you can do this by including the `[letterpaper]` option at the beginning of your file:

```
\documentclass[letterpaper]{article}.
```

This command is usually sufficient to change the format. Sometimes, however, it may not work, especially if you use PDFL^AT_EX. If you note that the font size is being shrunk to make the columns fit in A4 width, please consult the `aaai.sty`

buglist for three suggested fixes. **Do not use the Geometry package to alter the page size.** Use of this style file alters `aaai.sty` and will result in your paper being

It is also usually necessary to configure dvips. Try passing the `-tletter` option to dvips. Those using RedHat Linux 8.0 and L^AT_EX should also check the paper size setting in `"/usr/share/texmf/dvips/config/config.ps"` — it may be that "A4" is the default, rather than "letter." This can result in incorrect top and bottom margins in documents you prepare with L^AT_EX. You will need to edit the config file to correct the problem. (Once you've edited to config file for US letter, it may not be possible for you to print your papers locally).

Column Width and Margins

To ensure maximum readability, your paper must include two columns. Each column should be 3.3 inches wide (slightly more than 3.25 inches), with a .375 inch (.952 cm) gutter of white space between the two columns. The `aaai.sty` and `aaai.doc` template will automatically create these columns for you.

Warning

Do not alter column width or margin in an attempt to make your paper "fit" in a specific number of pages. We don't accept source or PDFs where margins have been altered (and telling us to use "shrink to fit" is not an acceptable solution). Papers that do not meet these column width and margin requirements will be returned.

Type Font and Size

Your paper must be formatted in Times Roman, Times New Roman, or Nimbus. We will not accept papers formatted using Computer Modern as the text or heading typeface. Sans serif, when used, should be Courier. Use Symbol or Lucida or Computer Modern for *mathematics only*.

Do not use type 3 fonts for any portion of your paper, including graphics. If you are unsure if your paper contain type 3 fonts, view the PDF in Acrobat Reader. The Properties/Fonts window will display the font name, font type, and encoding properties of all the fonts in the document. If you are unsure if your graphics contain type 3 fonts (and they are PostScript or encapsulated PostScript documents), create PDF versions of them, and consult the properties window in Acrobat Reader.

The default size for your type should be ten-point with eleven- or twelve-point leading (line spacing). If your paper is running long, change the leading to eleven point. If it is short, change the leading to twelve point. Twelve point leading is a little easier to read. Start all pages (except the first) directly under the top margin. (See the next section for instructions on formatting the title page.) Indent ten points when beginning a new paragraph, unless the paragraph begins directly below a heading or subheading.

Obtaining Type 1 Computer Modern for L^AT_EX

If you use Computer Modern for the mathematics in your paper (you cannot use it for the text) you may need to download type 1 Computer fonts. They are available

without charge from the American Mathematical Society:
<http://www.ams.org/tex/type1-fonts.html>.

Title and Authors

In the United States, it is a common practice to capitalize the first letter of more words in headlines and titles than in normal sentences. The style guides and authors instructions of U.S. publishers (including AAAI Press) require that you conform to this capitalization convention. Consequently, your title should appear in mixed case (nouns and verbs are capitalized) near the top of the first page, centered over both columns in sixteen-point bold type (twenty-four point leading). Author's names should appear below the title of the paper, centered in twelve-point type (with fifteen point leading), along with affiliation(s) and complete address(es) (including electronic mail address if available) in nine-point roman type (the twelve point leading). (If the title is long, or you have many authors, you may reduce the specified point sizes by up to two points.) You should begin the two-column format when you come to the abstract.

Formatting Author Information in L^AT_EX Author information can be set in a number of different styles, depending on the number of authors and the number of affiliations you need to display. For several authors from the same institution, use `\and`:

```
\author{Author 1 \and
...
\and Author n \\
Address line \\
...
\\ Address line}
```

If the names do not fit well on one line use:

```
\author{Author 1 \\ {\bf Author 2} \\
...
\\ {\bf Author n} \\
Address line \\
...
\\ Address line}
```

For authors from different institutions, use `\And`:

```
\author{Author 1 \\ Address line \\
...
\\ Address line
\And ... \And
Author n \\ Address line \\
...
\\ Address line}
```

To start a separate "row" of authors, use `\AND`:

```
\author{Author 1 \\ Address line \\
...
\\ Address line
\AND
Author 2 \\ Address line \\
...
\\ Address line \And
Author 3 \\ Address line \\
...
\\ Address line}
```

If the title and author information does not fit in the area allocated, place

```
\setlength\titlebox{\emph{height}}
```

after the `\documentclass` line where *height* is something like 2.5in.

Credits

Any credits to a sponsoring agency should appear in the acknowledgments section, unless the agency requires different placement.

Abstract

The abstract must be placed at the beginning of the first column, indented ten points from the left and right margins. The title Abstract should appear in ten-point bold type, centered above the body of the abstract. The abstract should be set in nine-point type with ten-point leading. This concise, one-paragraph summary should describe the general thesis and conclusion of your paper. A reader should be able to learn the purpose of the paper and the reason for its importance from the abstract. The abstract should be no more than two hundred words in length. (Authors who are submitting short one- or two-page extended extracts should provide a short abstract of only a sentence or so.) **Do not include references in your abstract!**

Page Numbers

Do not **ever** print any page numbers on your paper.

Text

The main body of the paper must be formatted in two columns. It follows the abstract. Each column of text should be 3.3 inches wide with a .375 inch (.952 cm) gutter should separating the two columns. Text should be ten-point with eleven-point or twelve-point leading (line spacing). If you are using Word, specify fractional widths and turn hyphenation on. Your text must be in Times Roman or its equivalent.

Citations

Citations within the text should include the author's last name and year, for example (Newell 1980). Append lowercase letters to the year in cases of ambiguity. Multiple authors should be treated as follows: (Feigenbaum and Englemore 1988) or (Ford, Hayes, and Glymour 1992). In the case of four or more authors, list only the first author, followed by et al. (Ford et al. 1997).

Extracts

Long quotations and extracts should be indented ten points from the left and right margins.

This is an example of an extract or quotation. Note the indent on both sides. Quotation marks are not necessary if you offset the text in a block like this, and properly identify and cite the quotation in the text.

Footnotes

Avoid footnotes as much as possible; they interrupt the reading of the text. When essential, they should be consecutively numbered throughout with superscript Arabic numbers. Footnotes should appear at the bottom of the page, separated from the text by a blank line space and a thin, half-point rule.

Headings and Sections

When necessary, headings should be used to separate major sections of your paper. Remember, you are writing a short paper, not a lengthy book! An overabundance of headings will tend to make your paper look more like an outline than a paper.

First-level heads should be twelve-point Times Roman bold type, mixed case (initial capitals followed by lower case on all words except articles, conjunctions, and prepositions, which should appear entirely in lower case), with fifteen-point leading, centered, with one blank line preceding them and three additional points of leading following them. Second-level headings should be eleven-point Times Roman bold type, mixed case, with thirteen-point leading, flush left, with one blank line preceding them and three additional points of leading following them. Do not skip a line between paragraphs. Third-level headings should be run in with the text, ten-point Times Roman bold type, mixed case, with twelve-point leading, flush left, with six points of additional space preceding them and no additional points of leading following them.

Section Numbers

The use of section numbers in AAI Press papers is optional. To use section numbers in \LaTeX , uncomment the setcounter line in your document preamble and change the 0 to a 1 or 2. To use section numbers in Word, simply add the numbers to your section by hand, or use Word's tools to automatically number the sections. Section numbers should not be used in short poster papers.

Section Headings

Sections should be arranged and headed as follows:

Acknowledgments The acknowledgments section, if included, appears after the main body of text and is headed "Acknowledgments." This section includes acknowledgments of help from associates and colleagues, credits to sponsoring agencies, financial support, and permission to publish. Please acknowledge other contributors, grant support, and so forth, in this section. Do not put acknowledgments in a footnote on the first page. If your grant agency requires acknowledgment of the grant on page 1, limit the footnote to the required statement, and put the remaining acknowledgments at the back. Please try to limit acknowledgments to no more than three sentences.

Appendices Any appendices follow the acknowledgments, if included, or after the main body of text if no acknowledgments appear.

References The references section should be labeled "References" and should appear at the very end of the paper (don't end the paper with references, and then put a figure by itself on the last page). A sample list of references is given later on in these instructions. Please use a consistent format for references. Poorly prepared or sloppy references reflect badly on the quality of your paper and your research. Please prepare complete and accurate citations.

Illustrations and Figures

Figures, drawings, tables, and photographs should be placed throughout the paper near the place where they are first discussed. Do not group them together at the end of the paper. If placed at the top or bottom of the paper, illustrations may run across both columns. Figures must not invade the top, bottom, or side margin areas. Figures must be inserted using your page-formatting software. Number figures sequentially, for example, figure 1, and so on.

The illustration number and caption should appear under the illustration. Leave some space between the figure and the caption and surrounding type; .25 inches should suffice. Captions should be presented in nine-point Times Roman italic. Labels, and other text in illustrations must be at least nine-point type.

Low-Resolution Bitmaps

You may not use low-resolution (such as 72 dpi) screen-dumps and GIF files—these files contain so few pixels that they are always blurry, and illegible when printed. If they are color, they will become an indecipherable mess when converted to black and white. This is always the case with gif files, which should never be used. The resolution of screen dumps can be increased by reducing the print size of the original file while retaining the same number of pixels. You can also enlarge files by manipulating them in software such as PhotoShop. Your figures should be a minimum of 266 dpi when incorporated into your document.

\LaTeX Overflow

\LaTeX users please beware: \LaTeX will sometimes put portions of the figure or table or an equation in the margin. If this happens, you need to scale the figure or table down, or reformat the equation, because **nothing** (not even a rule!) is allowed to intrude into the margins. Check your log file! You must fix any overflow into the margin (that means no overfull boxes in \LaTeX). If you don't whatever is in the margin will simply be eliminated by the printer. **Nothing is permitted to intrude into the margins.**

Using Color

Your paper will be printed in black and white and grayscale. Consequently, because conversion to grayscale can cause undesirable effects (red changes to black, yellow can disappear, and so forth), we strongly suggest you avoid placing color figures in your document. Of course, any reference to color will be indecipherable to your reader.

Drawings

We suggest you use computer drawing software (such as Adobe Illustrator or, (if unavoidable), the drawing tools in Microsoft Word) to create your illustrations. Do not use Microsoft Publisher. These illustrations will look best if all line widths are uniform (half- to two-point in size), and you do not create labels over shaded areas. Shading should be 133 lines per inch if possible. Use Times Roman or Helvetica for all figure call-outs. **Do not use hairline width lines** — be sure that the stroke width of all lines is at least .5 pt. Zero point lines will print on a laser printer, but will completely disappear on the high-resolution devices used by our printers.

Photographs and Images

Photographs and other images should be in grayscale (color photographs will not reproduce well; for example, red tones will reproduce as black, yellow may turn to white, and so forth) and set to a minimum of 266 dpi. Do not prescreen images.

Sample References

Book with Multiple Authors

Engelmore, R., and Morgan, A. eds. 1986. *Blackboard Systems*. Reading, Mass.: Addison-Wesley.

Journal Article

Robinson, A. L. 1980a. New Ways to Make Microcircuits Smaller. *Science* 208: 1019–1026.

Magazine Article

Hasling, D. W.; Clancey, W. J.; and Rennels, G. R. 1983. Strategic Explanations in Consultation. *The International Journal of Man-Machine Studies* 20(1): 3–19.

Proceedings Paper Published by a Society

Clancey, W. J. 1983b. Communication, Simulation, and Intelligent Agents: Implications of Personal Intelligent Machines for Medical Education. In Proceedings of the Eighth International Joint Conference on Artificial Intelligence, 556–560. Menlo Park, Calif.: International Joint Conferences on Artificial Intelligence, Inc.

Proceedings Paper Published by a Press or Publisher

Clancey, W. J. 1984. Classification Problem Solving. In *Proceedings of the Fourth National Conference on Artificial Intelligence*, 49–54. Menlo Park, Calif.: AAAI Press.

University Technical Report

Rice, J. 1986. Poligon: A System for Parallel Problem Solving, Technical Report, KSL-86-19, Dept. of Computer Science, Stanford Univ.

Dissertation or Thesis

Clancey, W. J. 1979b. Transfer of Rule-Based Expertise through a Tutorial Dialogue. Ph.D. diss., Dept. of Computer Science, Stanford Univ., Stanford, Calif.

Forthcoming Publication

Clancey, W. J. 1986a. The Engineering of Qualitative Models. Forthcoming.

Using L^AT_EX and BiBTeX to Create Your References

At the end of your paper, you can include your reference list by using the following commands:

```
\bibliography{Bibliography-File}
\bibliographystyle{aaai}
\end{document}
```

The aaai.sty file includes a set of definitions for use in formatting references with BibTeX. These definitions make the bibliography style fairly close to the one specified previously. To use these definitions, you also need the BibTeX style file “aaai.bst,” available in the author kit on the AAAI web site. Then, at the end of your paper but before `\enddocument`, you need to put the following lines:

```
\bibliographystyle{aaai}
\bibliography{bibfile1,bibfile2,...}
```

The list of files in the bibliography command should be the names of your BibTeX source files (that is, the .bib files referenced in your paper).

The following commands are available for your use in citing references:

`\cite`: Cites the given reference(s) with a full citation. This appears as “(Author Year)” for one reference, or “(Author Year; Author Year)” for multiple references.

`\shortcite`: Cites the given reference(s) with just the year. This appears as “(Year)” for one reference, or “(Year; Year)” for multiple references.

`\citeauthor`: Cites the given reference(s) with just the author name(s) and no parentheses.

`\citeyear`: Cites the given reference(s) with just the date(s) and no parentheses.

Warning: The aaai.sty file is incompatible with the hyperref package. If you use hyperref, your references will be garbled. Do not use hyperref.

Creating a Reliable PDF File with Microsoft Word

Your paper must be submitted as a US-letter sized PDF, containing only fully-embedded type 1 PostScript or TrueType fonts. We cannot accept files that contain **any** type 3 fonts or CID or Identify-H fonts or that are formatted for A4 paper or where the fonts are not fully embedded. Your file also must abide by the margin requirements stated in this document. Please check your PDF to ensure that it complies with these requirements.

Distiller Settings

We need PDF files that can be used in a variety of ways and can be output on a variety of devices. To do that, we need files that contain high-resolution graphics and scalable fonts.

To ensure that your Word-generated PDF is acceptable, **do not use the Office PDF Maker**. Instead, create a PostScript file with type 1 fonts and a resolution of 1200 dpi, then distill the PostScript file using Acrobat Distiller 5.0 or later. This is the most reliable way to make a PDF.

When you create a PDF from a PostScript file, you will need to configure Acrobat Distiller. That usually only means that you should choose "PDF/X-1a:2001" as the default Distiller setting. If that isn't available, your distiller setting should be set to produce a high-end print PDF file (press quality); thus, automatic compression should be set to ZIP, the default resolution should be a minimum of 1,200 dpi, compatibility should be set to Acrobat 5.0, and down sampling should be turned off. All fonts should be embedded, and the default page size must be set to letter (8.5 x 11 inches), not A4. Most versions of the Acrobat Distiller can be easily set to conform to these settings by choosing the "PDF/X-1a:2001" job option bundled with Acrobat Distiller. Do not choose the Screen optimized setting — if you do your paper cannot be published. (You are not creating a file for the web.)

CID Fonts

Many installations of Word now use CID or Identity-H fonts. Unfortunately, these multi-language fonts cause problems when combined with other files and when output using many high-resolution devices. The fonts are also not compatible with older systems. Please check your PDF. If you find the letters CID or Identity-H next to your text font (Times New Roman, Times Roman, Times Italic, Times Bold, and so forth), you will need to install a non-CID version of Times on your system, and search and replace all instances of the CID font with the new non-CID font. If your PDF includes a CID version of Symbol or Wingdings, you may convert those font to outlines. This option is not available for Times, however, because PDFs consisting only of outlines cannot be indexed. (If you can't convert those fonts to outlines in your PDF, you'll need to search and replace Symbol and Wingdings as well.) Please do not include fonts other than Arial, Times, Symbol, Helvetica, and Wingdings in your Word document or graphics file.

Producing Reliable PDF Documents with \LaTeX

Generally speaking, PDF files are platform independent and accessible to everyone. When creating a paper for a proceedings or publication in which many PDF documents must be merged and then printed on high-resolution PostScript RIPs, several requirements must be met that are not normally of concern. Thus to ensure that your paper will look like it does when printed on your own machine, you must take several precautions:

- Use type 1 fonts (not type 3 fonts)
- Use only standard Times, Nimbus, and CMR font packages (not fonts like F3 or fonts with tildes in the names or fonts—other than Computer Modern—that are created for specific point sizes, like Times~19) or fonts with strange combinations of numbers and letters

- Embed all fonts when producing the PDF
- Do not use the [T1]fontenc package (install the CM super fonts package instead)

Fonts

Papers published in AAAI publications must be formatted using the Times family of fonts so that all papers in the proceedings have a uniform appearance. If you've been using Computer Modern, the first advantage you will see to using Times is that the character count is smaller — that means you can put more words on a page!

Some fonts (such as Times-Roman and Courier) are expected to be available on all PDF devices and are not normally embedded. However, when your Times Roman font is combined with the Times Roman font of another paper, it is possible that conflicts will occur. Consequently, if you have used some special characters in the Times font, you should embed even these fonts.

Type 3 Fonts Type 3 bitmapped fonts are designed for fixed resolution printers. Most print at 300 dpi even if the printer resolution is 1200 dpi or higher. They also often cause high resolution imagesetter devices and our PDF indexing software to crash. Consequently, AAAI will not accept electronic files containing obsolete type 3 fonts. Files containing those fonts (even in graphics) will be returned to the authors unpublished.

Fortunately, there are effective workarounds that will prevent your file from embedding type 3 bitmapped fonts. The easiest workaround is to use the times, helvet, and courier packages with \LaTeX 2e. (Note that papers formatted in this way will still use Computer Modern for the mathematics. To make the math look good, you'll either have to use Symbol or Lucida, or you will need to install type 1 Computer Modern fonts — for more on these fonts, see the section "Obtaining Type 1 Computer Modern.")

Traditional \LaTeX Output

Most authors using traditional \LaTeX output methods will have success by taking the following three steps in creating their paper (called, in the example, proceedingspaper.tex).

```
latex proceedingspaper
dvips -Ppdf -G0 -tletter proceedingspaper
ps2pdf -dPDFSETTINGS=/printer
-dCompatibilityLevel=1.4 -dMaxSubsetPct=0
-dSubsetFonts=false -dEmbedAllFonts=true
-sPAPERSIZE=letter proceedingspaper.ps
```

Note that the ps2pdf command should be typed all on one line. You can then proceed to distill your PostScript file into a PDF file using GhostScript or Acrobat Distiller.

If your PostScript output still includes type 3 fonts, you should run dvips with option "dvips -Ppdf -G0 -o papername.ps papername.dvi" (If your machine or site has type 1 fonts, they will probably be loaded.) Note that it is a zero following the "-G." This tells dvips to use the config.pdf file (and this file refers to a better font mapping). If that doesn't work, you'll have to download the fonts and create a font substitution list.

Creating Output Using PDF \LaTeX

PDF \LaTeX is a good alternative solution to the \LaTeX font problem. By using the PDF \TeX program instead of straight \LaTeX or \TeX , you will probably avoid the type 3 font problem altogether. PDF \LaTeX enables you to create a PDF document directly from \LaTeX source. The one requirement of this software is that all your graphics and images are available in a format that PDF \LaTeX understands (normally PDF).

PDF \LaTeX 's default is to create documents with type 1 fonts. If you find that it is not doing so in your case, it is likely that one or more fonts are missing from your system or are not in a path that is known to PDF \LaTeX .

One problem with PDF \LaTeX , however, is that, by default, it will not embed the Base 14 fonts. AAAI will embed these fonts for you, but we will not be able to proofread the results. If you are concerned that font substitution may alter your paper in an adverse way (and it can), we recommend that you alter the `pdftex.cfg` configuration file so that the following lines are present and uncommented:

```
map +bsr.map % CM/AMS fonts
map +bsr-interpolated.map % additional sizes
map +hoekwater.map % additional fonts
```

and that the base 14 Nimbus fonts are embedded by replacing the line

```
map acrobat-std-adobe-suildin.map
```

with

```
map acrobat-std-urw-kb.map
```

If this doesn't work, you should look at the pdf \TeX mailing list for hints on how to configure pdf \TeX or PDF \LaTeX to properly embed the typefaces: <http://tug.org/pipermail/pdftex/2002-July/002803.html>

dvipdf Script Scripts such as `dvipdf` which ostensibly bypass the Postscript intermediary should not be used since they generally do not instruct `dvips` to use the `config.pdf` file.

dvipdfm Do not use this dvi-PDF conversion package if your document contains graphics (and we recommend you avoid it even if your document does not contain graphics).

Ghostscript

\LaTeX users using GhostScript should make sure that they are using v7.04 or newer. The older versions do not create acceptable PDF files on most platforms.

Graphics

If you are still finding type 3 fonts in your PDF file, look at your graphics! \LaTeX users should check all their imported graphics files as well for font problems.

Making A Font Substitution List

Once you've installed the type 1 Computer Modern fonts, you'll need to get `dvips` to refrain from embedding the bitmap fonts. To do this, you'll need to create a font substitution list for use by `dvips`. Each line of this file should start with the name of the font that TeX uses, as shown below:

```
cmb10 </usr/local/lib/tex/fonts/type1/cmb10.pfb
cmbsy10 </usr/local/lib/tex/fonts/type1/cmbsy10.pfb
cmbsy6 </usr/local/lib/tex/fonts/type1/cmbsy6.pfb
cmbsy7 </usr/local/lib/tex/fonts/type1/cmbsy7.pfb
cmbsy8 </usr/local/lib/tex/fonts/type1/cmbsy8.pfb
cmbsy9 </usr/local/lib/tex/fonts/type1/cmbsy9.pfb
cmbx10 </usr/local/lib/tex/fonts/type1/cmbx10.pfb
cmbx12 </usr/local/lib/tex/fonts/type1/cmbx12.pfb
```

In this example, the assumption is that you have PFB versions of the Computer Modern fonts located in the directory `/usr/local/lib/tex/fonts/type1/`. The file name should be the type 1 encoding of the Postscript font in PFB or PFA format.

If your home directory contains a file called `.dvipsrc` containing the line: `"* p +fontMapFileName"` that font map will be used by `dvips` for all the jobs you run. You can also create a file, like `config.embed` that contains that line. If you do that, when you invoke `dvips` with the command `"dvips -P embed ..."` `dvips` will look for `config.embed` in the current directory (and perhaps your home directory). You may need to change how `dvips` looks for config files. To do this, read the "environment variables" section of the `dvips` documentation.

If you need more information, or a better and more technical explanation of how to make this all work, Kendall Whitehouse has written detailed instructions on "Creating Quality Adobe PDF Files from TeX with DVIPS." It is available from Adobe's website, and other sites on the Internet (you'll need to do a quick search for it).

Checking For Improper Fonts

Once a PDF has been made, authors should check to ensure that the file contains no type 3 fonts and further that all fonts have been embedded. This step is hardly ever used by authors, and it would save significant time (and help keep conference fees down) if they would simply take 45 seconds and do this. This can be done with the `pdffonts` utility that is included in the Xpdf package (<http://www.foolabs.com/xpdf/>). Use the command: `pdffonts proceedingspaper.pdf` This will list the fonts included in your document. Check to ensure the following:

- All fonts have type 1 or TrueType in the type column
- All fonts have "yes" in the "emb" (embedded) column
- None of the fonts listed have tildes or names consisting of long strings of numbers and letters

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Inserting Document Metadata with L^AT_EX

Use the following PostScript command near the beginning of the L^AT_EX document code:

```
\special{! /pdfmark where
{pop} {userdict /pdfmark /cleartomark load put} ifelse
[ /Author (John Doe, Jane Doe)
/Title (Paper Title)
/Keywords (AAAI, artificial intelligence)
/DOCINFO pdfmark}
```

With PDF^TE_X, you can also use

```
\pdfinfo{/Author (John Doe, Jane Doe)
/Title (Paper Title)
/Keywords (artificial intelligence, AI)}
```

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file on the AAAI website. Some of these suggestions have already been implemented, while others seem to be dependent on individual site conditions. If you're having problems with `aaai.sty`, we suggest you look at the "bug list" first. The style file is **not** guaranteed to work in all situations and on all platforms. If you make bug fixes or improvements, please let us know so that we might share them with others.

Additional Resources

L^AT_EX is a difficult program to master. If you've used that software, and this document didn't help or some items were not explained clearly, we recommend you read Michael Shell's excellent document (`testflow doc.txt V1.0a 2002/08/13`) about obtaining correct PS/PDF output on L^AT_EX systems. (It was written for another purpose, but it has general application as well). It is available at www.ctan.org in the `tex-archive`.

Acknowledgments

AAAI is especially grateful to Peter Patel Schneider for his work in implementing the `aaai.sty` file, liberally using the ideas of other style hackers, including Barbara Beeton. We also acknowledge with thanks the work of George Ferguson for his guide to using the style and BibT_EX files — which has been incorporated into this document, as well as the many others who have, from time to time, sent in suggestions on improvements to the AAAI style.

The preparation of the L^AT_EX and BibT_EX files that implement these instructions was supported by Schlumberger Palo Alto Research, AT&T Bell Laboratories, Morgan Kaufmann Publishers, The Live Oak Press, LLC, and AAAI Press. Bibliography style changes were added by Sunil Issar. `\pubnote` was added by J. Scott Penberthy. George Ferguson added support for printing the AAAI copyright slug. Additional changes to `aaai.sty` and `aaai.bst` have been made by the AAAI staff.

Thank you for reading these instructions carefully. We look forward to receiving your electronic files!