

# The Name of the Title is Hope

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Fig. 1. Seattle Mariners at Spring Training, 2010.

A clear and well-documented  $\LaTeX$  document is presented as an article formatted for publication by ACM in a conference proceedings or journal publication. Based on the “acmart” document class, this article presents and explains many of the common variations, as well as many of the formatting elements an author may use in the preparation of the documentation of their work.

CCS Concepts: • **Computer systems organization** → **Embedded systems**; *Redundancy*; Robotics; • **Networks** → Network reliability.

Additional Key Words and Phrases: datasets, neural networks, gaze detection, text tagging

## ACM Reference Format:

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## 1 INTRODUCTION

ACM’s consolidated article template, introduced in 2017, provides a consistent  $\LaTeX$  style for use across ACM publications, and incorporates accessibility and metadata-extraction functionality necessary for future Digital Library endeavors. Numerous ACM and SIG-specific  $\LaTeX$  templates have been examined, and their unique features incorporated into this single new template.

If you are new to publishing with ACM, this document is a valuable guide to the process of preparing your work for publication. If you have published with ACM before, this document provides insight and instruction into more recent changes to the article template.

The “acmart” document class can be used to prepare articles for any ACM publication – conference or journal, and for any stage of publication, from review to final “camera-ready” copy, to the author’s own version, with *very* few changes to the source.

## 2 TEMPLATE OVERVIEW

As noted in the introduction, the “acmart” document class can be used to prepare many different kinds of documentation – a double-blind initial submission of a full-length technical paper, a two-page SIGGRAPH Emerging Technologies abstract, a “camera-ready” journal article, a SIGCHI Extended Abstract, and more – all by selecting the appropriate *template style* and *template parameters*.

This document will explain the major features of the document class. For further information, the  *$\LaTeX$  User’s Guide* is available from <https://www.acm.org/publications/proceedings-template>.

### 2.1 Template Styles

The primary parameter given to the “acmart” document class is the *template style* which corresponds to the kind of publication or SIG publishing the work. This parameter is enclosed in square brackets and is a part of the `documentclass` command:

```
\documentclass[STYLE]{acmart}
```

Journals use one of three template styles. All but three ACM journals use the `acmsmall` template style:

- `acmsmall`: The default journal template style.
- `acmlarge`: Used by JOCCH and TAP.
- `acmtog`: Used by TOG.

The majority of conference proceedings documentation will use the `acmconf` template style.

- `acmconf`: The default proceedings template style.
- `sigchi`: Used for SIGCHI conference articles.
- `sigchi-a`: Used for SIGCHI “Extended Abstract” articles.
- `sigplan`: Used for SIGPLAN conference articles.

### 2.2 Template Parameters

In addition to specifying the *template style* to be used in formatting your work, there are a number of *template parameters* which modify some part of the applied template style. A complete list of these parameters can be found in the  *$\LaTeX$  User’s Guide*.

Frequently-used parameters, or combinations of parameters, include:

- `anonymous, review`: Suitable for a “double-blind” conference submission. Anonymizes the work and includes line numbers. Use with the `\acmSubmissionID` command to print the submission’s unique ID on each page of the work.
- `authorversion`: Produces a version of the work suitable for posting by the author.
- `screen`: Produces colored hyperlinks.

This document uses the following string as the first command in the source file:

```
\documentclass[sigconf,authordraft]{acmart}
```

### 3 MODIFICATIONS

Modifying the template — including but not limited to: adjusting margins, typeface sizes, line spacing, paragraph and list definitions, and the use of the `\vspace` command to manually adjust the vertical spacing between elements of your work — is not allowed.

**Your document will be returned to you for revision if modifications are discovered.**

### 4 TYPEFACES

The “acmart” document class requires the use of the “Libertine” typeface family. Your  $\TeX$  installation should include this set of packages. Please do not substitute other typefaces. The “lmodern” and “l`times`” packages should not be used, as they will override the built-in typeface families.

### 5 TITLE INFORMATION

The title of your work should use capital letters appropriately - <https://capitalizemytitle.com/> has useful rules for capitalization. Use the `title` command to define the title of your work. If your work has a subtitle, define it with the `subtitle` command. Do not insert line breaks in your title.

If your title is lengthy, you must define a short version to be used in the page headers, to prevent overlapping text. The `title` command has a “short title” parameter:

```
\title[short title]{full title}
```

### 6 AUTHORS AND AFFILIATIONS

Each author must be defined separately for accurate metadata identification. Multiple authors may share one affiliation. Authors’ names should not be abbreviated; use full first names wherever possible. Include authors’ e-mail addresses whenever possible.

Grouping authors’ names or e-mail addresses, or providing an “e-mail alias,” as shown below, is not acceptable:

```
\author{Brooke Aster, David Mehldau}
\email{dave,judy,steve@university.edu}
\email{firstname.lastname@phillips.org}
```

The `authornote` and `authornotemark` commands allow a note to apply to multiple authors — for example, if the first two authors of an article contributed equally to the work.

If your author list is lengthy, you must define a shortened version of the list of authors to be used in the page headers, to prevent overlapping text. The following command should be placed just after the last `\author{}` definition:

157 `\renewcommand{\shortauthors}{McCartney, et al.}`

158  
159 Omitting this command will force the use of a concatenated list of all of the authors' names, which may result in  
160 overlapping text in the page headers.

161 The article template's documentation, available at <https://www.acm.org/publications/proceedings-template>, has a  
162 complete explanation of these commands and tips for their effective use.

163 Note that authors' addresses are mandatory for journal articles.  
164  
165

## 166 7 RIGHTS INFORMATION

167 Authors of any work published by ACM will need to complete a rights form. Depending on the kind of work, and the  
168 rights management choice made by the author, this may be copyright transfer, permission, license, or an OA (open  
169 access) agreement.  
170

171 Regardless of the rights management choice, the author will receive a copy of the completed rights form once it  
172 has been submitted. This form contains  $\LaTeX$  commands that must be copied into the source document. When the  
173 document source is compiled, these commands and their parameters add formatted text to several areas of the final  
174 document:  
175  
176

- 177 • the “ACM Reference Format” text on the first page.
- 178 • the “rights management” text on the first page.
- 179 • the conference information in the page header(s).  
180

181 Rights information is unique to the work; if you are preparing several works for an event, make sure to use the  
182 correct set of commands with each of the works.  
183

184 The ACM Reference Format text is required for all articles over one page in length, and is optional for one-page  
185 articles (abstracts).  
186

## 187 8 CCS CONCEPTS AND USER-DEFINED KEYWORDS

188  
189 Two elements of the “acmart” document class provide powerful taxonomic tools for you to help readers find your work  
190 in an online search.

191 The ACM Computing Classification System — <https://www.acm.org/publications/class-2012> — is a set of classifiers  
192 and concepts that describe the computing discipline. Authors can select entries from this classification system, via  
193 <https://dl.acm.org/ccs/ccs.cfm>, and generate the commands to be included in the  $\LaTeX$  source.  
194

195 User-defined keywords are a comma-separated list of words and phrases of the authors' choosing, providing a more  
196 flexible way of describing the research being presented.  
197

198 CCS concepts and user-defined keywords are required for for all articles over two pages in length, and are optional  
199 for one- and two-page articles (or abstracts).  
200

## 201 9 SECTIONING COMMANDS

202  
203 Your work should use standard  $\LaTeX$  sectioning commands: section, subsection, subsubsection, and paragraph.  
204 They should be numbered; do not remove the numbering from the commands.  
205

206 Simulating a sectioning command by setting the first word or words of a paragraph in boldface or italicized text is  
207 **not allowed**.  
208

Table 1. Frequency of Special Characters

Non-English or Math	Frequency	Comments
$\emptyset$	1 in 1,000	For Swedish names
$\pi$	1 in 5	Common in math
$\$$	4 in 5	Used in business
$\Psi_1^2$	1 in 40,000	Unexplained usage

Table 2. Some Typical Commands

Command	A Number	Comments
<code>\author</code>	100	Author
<code>\table</code>	300	For tables
<code>\table*</code>	400	For wider tables

## 10 TABLES

The “acmart” document class includes the “booktabs” package — <https://ctan.org/pkg/booktabs> — for preparing high-quality tables.

Table captions are placed *above* the table.

Because tables cannot be split across pages, the best placement for them is typically the top of the page nearest their initial cite. To ensure this proper “floating” placement of tables, use the environment `table` to enclose the table’s contents and the table caption. The contents of the table itself must go in the `tabular` environment, to be aligned properly in rows and columns, with the desired horizontal and vertical rules. Again, detailed instructions on `tabular` material are found in the *L<sup>A</sup>T<sub>E</sub>X User’s Guide*.

Immediately following this sentence is the point at which Table 1 is included in the input file; compare the placement of the table here with the table in the printed output of this document.

To set a wider table, which takes up the whole width of the page’s live area, use the environment `table*` to enclose the table’s contents and the table caption. As with a single-column table, this wide table will “float” to a location deemed more desirable. Immediately following this sentence is the point at which Table 2 is included in the input file; again, it is instructive to compare the placement of the table here with the table in the printed output of this document.

Always use `midrule` to separate table header rows from data rows, and use it only for this purpose. This enables assistive technologies to recognise table headers and support their users in navigating tables more easily.

## 11 MATH EQUATIONS

You may want to display math equations in three distinct styles: inline, numbered or non-numbered display. Each of the three are discussed in the next sections.

### 11.1 Inline (In-text) Equations

A formula that appears in the running text is called an inline or in-text formula. It is produced by the `math` environment, which can be invoked with the usual `\begin . . . \end` construction or with the short form `\$ . . . \$`. You can use any of the symbols and structures, from  $\alpha$  to  $\omega$ , available in L<sup>A</sup>T<sub>E</sub>X [24]; this section will simply show a few examples of

261 in-text equations in context. Notice how this equation:  $\lim_{n \rightarrow \infty} x = 0$ , set here in in-line math style, looks slightly  
 262 different when set in display style. (See next section).  
 263

## 264 11.2 Display Equations

265 A numbered display equation—one set off by vertical space from the text and centered horizontally—is produced by the  
 266 **equation** environment. An unnumbered display equation is produced by the **displaymath** environment.

267 Again, in either environment, you can use any of the symbols and structures available in  $\LaTeX$ ; this section will just  
 268 give a couple of examples of display equations in context. First, consider the equation, shown as an inline equation  
 269 above:  
 270

$$271 \lim_{n \rightarrow \infty} x = 0 \tag{1}$$

272 Notice how it is formatted somewhat differently in the **displaymath** environment. Now, we'll enter an unnumbered  
 273 equation:  
 274

$$275 \sum_{i=0}^{\infty} x + 1$$

276 and follow it with another numbered equation:  
 277

$$278 \sum_{i=0}^{\infty} x_i = \int_0^{\pi+2} f \tag{2}$$

279 just to demonstrate  $\LaTeX$ 's able handling of numbering.  
 280

## 281 12 FIGURES

282 The “figure” environment should be used for figures. One or more images can be placed within a figure. If your figure  
 283 contains third-party material, you must clearly identify it as such, as shown in the example below.  
 284

285 Your figures should contain a caption which describes the figure to the reader.

286 Figure captions are placed *below* the figure.

287 Every figure should also have a figure description unless it is purely decorative. These descriptions convey what's in  
 288 the image to someone who cannot see it. They are also used by search engine crawlers for indexing images, and when  
 289 images cannot be loaded.  
 290

291 A figure description must be unformatted plain text less than 2000 characters long (including spaces). **Figure**  
 292 **descriptions should not repeat the figure caption – their purpose is to capture important information that is**  
 293 **not already provided in the caption or the main text of the paper.** For figures that convey important and complex  
 294 new information, a short text description may not be adequate. More complex alternative descriptions can be placed in  
 295 an appendix and referenced in a short figure description. For example, provide a data table capturing the information in  
 296 a bar chart, or a structured list representing a graph. For additional information regarding how best to write figure  
 297 descriptions and why doing this is so important, please see <https://www.acm.org/publications/taps/describing-figures/>.  
 298  
 299  
 300  
 301  
 302  
 303  
 304

### 305 12.1 The “Teaser Figure”

306 A “teaser figure” is an image, or set of images in one figure, that are placed after all author and affiliation information,  
 307 and before the body of the article, spanning the page. If you wish to have such a figure in your article, place the  
 308 command immediately before the `\maketitle` command:  
 309

```
310 \begin{teaserfigure}
```



Fig. 2. 1907 Franklin Model D roadster. Photograph by Harris & Ewing, Inc. [Public domain], via Wikimedia Commons. (<https://goo.gl/VLCRBB>).

```

\includegraphics[width=\textwidth]{sampleteaser}
\caption{figure caption}
\Description{figure description}
\end{teaserfigure}

```

### 13 CITATIONS AND BIBLIOGRAPHIES

The use of  $\LaTeX$  for the preparation and formatting of one’s references is strongly recommended. Authors’ names should be complete – use full first names (“Donald E. Knuth”) not initials (“D. E. Knuth”) – and the salient identifying features of a reference should be included: title, year, volume, number, pages, article DOI, etc.

The bibliography is included in your source document with these two commands, placed just before the `\end{document}` command:

```
\bibliographystyle{ACM-Reference-Format}
```

365 `\bibliography{bibfile}`

366 where “bibfile” is the name, without the “.bib” suffix, of the  $\TeX$  file.

367 Citations and references are numbered by default. A small number of ACM publications have citations and references  
 368 formatted in the “author year” style; for these exceptions, please include this command in the **preamble** (before the  
 369 command “`\begin{document}`”) of your  $\LaTeX$  source:

370 `\citestyle{acmauthoryear}`

371  
 372  
 373 Some examples. A paginated journal article [2], an enumerated journal article [10], a reference to an entire issue [9],  
 374 a monograph (whole book) [23], a monograph/whole book in a series (see 2a in spec. document) [17], a divisible-book  
 375 such as an anthology or compilation [12] followed by the same example, however we only output the series if the  
 376 volume number is given [13] (so Editor00a’s series should NOT be present since it has no vol. no.), a chapter in a divisible  
 377 book [35], a chapter in a divisible book in a series [11], a multi-volume work as book [22], a couple of articles in a  
 378 proceedings (of a conference, symposium, workshop for example) (paginated proceedings article) [3, 15], a proceedings  
 379 article with all possible elements [34], an example of an enumerated proceedings article [14], an informally published  
 380 work [16], a couple of preprints [6, 7], a doctoral dissertation [8], a master’s thesis: [4], an online document / world  
 381 wide web resource [1, 28, 36], a video game (Case 1) [27] and (Case 2) [26] and [25] and (Case 3) a patent [33], work  
 382 accepted for publication [30], ‘YYYYb’-test for prolific author [31] and [32]. Other cites might contain ‘duplicate’ DOI  
 383 and URLs (some SIAM articles) [21]. Boris / Barbara Beeton: multi-volume works as books [19] and [18]. A couple of  
 384 citations with DOIs: [20, 21]. Online citations: [36–38]. Artifacts: [29] and [5].

385

#### 386 14 ACKNOWLEDGMENTS

387 Identification of funding sources and other support, and thanks to individuals and groups that assisted in the research  
 388 and the preparation of the work should be included in an acknowledgment section, which is placed just before the  
 389 reference section in your document.

390 This section has a special environment:

391 `\begin{acks}`  
 392 `...`  
 393 `\end{acks}`

394

395 so that the information contained therein can be more easily collected during the article metadata extraction phase, and  
 396 to ensure consistency in the spelling of the section heading.

397 Authors should not prepare this section as a numbered or unnumbered `\section`; please use the “acks” environment.

398

#### 399 15 APPENDICES

400 If your work needs an appendix, add it before the “`\end{document}`” command at the conclusion of your source  
 401 document.

402 Start the appendix with the “appendix” command:

403 `\appendix`

404

405 and note that in the appendix, sections are lettered, not numbered. This document has two appendices, demonstrating  
 406 the section and subsection identification method.

407



## 417 16 MULTI-LANGUAGE PAPERS

418 Papers may be written in languages other than English or include titles, subtitles, keywords and abstracts in different  
 419 languages (as a rule, a paper in a language other than English should include an English title and an English abstract).  
 420 Use `language=...` for every language used in the paper. The last language indicated is the main language of the paper.  
 421 For example, a French paper with additional titles and abstracts in English and German may start with the following  
 422 command  
 423

```
424 \documentclass[sigconf, language=english, language=german,  
425                 language=french]{acmart}
```

426  
 427 The title, subtitle, keywords and abstract will be typeset in the main language of the paper. The commands  
 428 `\translatedXXX`, `XXX` begin title, subtitle and keywords, can be used to set these elements in the other languages. The  
 429 environment `translatedabstract` is used to set the translation of the abstract. These commands and environment have  
 430 a mandatory first argument: the language of the second argument. See `sample-sigconf-i13n.tex` file for examples of  
 431 their usage.  
 432  
 433

## 434 17 SIGCHI EXTENDED ABSTRACTS

435 The “sigchi-a” template style (available only in  $\LaTeX$  and not in Word) produces a landscape-orientation formatted  
 436 article, with a wide left margin. Three environments are available for use with the “sigchi-a” template style, and  
 437 produce formatted output in the margin:  
 438

- 439 • `sidebar`: Place formatted text in the margin.
- 440 • `marginfigure`: Place a figure in the margin.
- 441 • `marginfigure`: Place a figure in the margin.
- 442 • `marginfigure`: Place a figure in the margin.
- 443 • `marginfigure`: Place a figure in the margin.
- 444 • `marginfigure`: Place a figure in the margin.

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446 To Robert, for the bagels and explaining CMYK and color spaces.  
 447  
 448

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## 513 A RESEARCH METHODS

### 514 A.1 Part One

515 Lorem ipsum dolor sit amet, consectetur adipiscing elit. Morbi malesuada, quam in pulvinar varius, metus nunc  
516 fermentum urna, id sollicitudin purus odio sit amet enim. Aliquam ullamcorper eu ipsum vel mollis. Curabitur quis  
517 dictum nisl. Phasellus vel semper risus, et lacinia dolor. Integer ultricies commodo sem nec semper.  
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**521 A.2 Part Two**

522 Etiam commodo feugiat nisl pulvinar pellentesque. Etiam auctor sodales ligula, non varius nibh pulvinar semper.  
523 Suspendisse nec lectus non ipsum convallis congue hendrerit vitae sapien. Donec at laoreet eros. Vivamus non purus  
524 placerat, scelerisque diam eu, cursus ante. Etiam aliquam tortor auctor efficitur mattis.  
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**527 B ONLINE RESOURCES**

528 Nam id fermentum dui. Suspendisse sagittis tortor a nulla mollis, in pulvinar ex pretium. Sed interdum orci quis metus  
529 euismod, et sagittis enim maximus. Vestibulum gravida massa ut felis suscipit congue. Quisque mattis elit a risus ultrices  
530 commodo venenatis eget dui. Etiam sagittis eleifend elementum.  
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532 Nam interdum magna at lectus dignissim, ac dignissim lorem rhoncus. Maecenas eu arcu ac neque placerat aliquam.  
533 Nunc pulvinar massa et mattis lacinia.  
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536 Received 20 February 2007; revised 12 March 2009; accepted 5 June 2009  
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