

Quick start for LaTeXing with IEEEtran.cls for IEEE Computer Society Conferences

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Abstract—Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetur id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

I. INTRODUCTION

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
Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed

diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit ligula feugiat magna. Nunc eleifend consequat lorem. Sed lacinia nulla vitae enim. Pellentesque tincidunt purus vel magna. Integer non enim. Praesent euismod nunc eu purus. Donec bibendum quam in tellus. Nullam cursus pulvinar lectus. Donec et mi. Nam vulputate  etus eu enim. Vestibulum pellentesque felis eu massa.

The remainder of the paper starts with a presentation of related work (Section II). It is followed by a presentation of hints on \LaTeX (Section III). Finally, a conclusion is drawn and outlook on future work is made (Section IV).

II. RELATED WORK

Winery [1] is a graphical  modeling tool. The whole idea of TOSCA is explained by Binz et al. [2].

III. LATEX HINTS

This section contains hints on writing LaTeX. It focuses on minimal examples, which can be directly adapted to the content

A. Handling of paragraphs

One sentence per line. This rule is important for the usage of version control systems. A new line is generated with a blank line. As you would do in Word: New paragraphs are generated by pressing enter. In LaTeX, this does not lead to a new paragraph as LaTeX joins subsequent lines. In case you want a new paragraph, just press enter twice (!). This leads to an empty line. In word, there is the functionality to press shift and enter. This leads to a hard line break. The text starts at the beginning of a new line. In LaTeX, you can do that by using two backslashes (\backslash).

This is rarely used.

Please do *not* use two backslashes for new paragraphs. For instance, this sentence belongs to the same paragraph, whereas the last one started a new one. A long motivation for that is provided at <http://loopspace.mathforge.org/HowDidIDoThat/TeX/VCS/#section.3>.

Corresponding L^AT_EX code of paper-conference.tex

```

444 One sentence per line.
445 This rule is important for the usage of version control systems.
446 A new line is generated with a blank line.
447 As you would do in Word:
448 New paragraphs are generated by pressing enter.
449 In LaTeX, this does not lead to a new paragraph as LaTeX joins
    subsequent lines.
450 In case you want a new paragraph, just press enter twice (!).
451 This leads to an empty line.
452 In word, there is the functionality to press shift and enter.
453 This leads to a hard line break.
454 The text starts at the beginning of a new line.
455 In LaTeX, you can do that by using two backslashes
    (\textbackslash\textbackslash).\\
456 This is rarely used.
457
458 Please do \textit{not} use two backslashes for new paragraphs.
459 For instance, this sentence belongs to the same paragraph,
    whereas the last one started a new one.
460 A long motivation for that is provided at
    \url{http://loopspace.mathforge.org/HowDidIDoThat/TeX/VCS/#section.3}.

```

B. Notes separated from the text

The package mindflow enables writing down notes and annotations in a way so that they are separated from the main text.

This is a small note.

Corresponding L^AT_EX code of paper-conference.tex

```

468 \begin{mindflow}
469 This is a small note.
470 \end{mindflow}

```

C. Hyphenation

L^AT_EX automatically hyphenates words. When using microtype, there should be less hyphenations than in other settings. It might be necessary to tweak the hyphenations nevertheless. Here are some hints:

In case you write “application-specific”, then the word will only be hyphenated at the dash. You can also write applica\allowbreak{}tion-specific (result: application-specific), but this is much more effort.

You can now write words containing hyphens which are hyphenated at other places in the word. For instance, application=specific gets application=specific. This is enabled by an additional configuration of the babel package.

Corresponding L^AT_EX code of paper-conference.tex

```

481 In case you write \enquote{application-specific}, then the word
    will only be hyphenated at the dash.
482 You can also write \verb!applica\allowbreak{}tion-specific!
    (result: applica\allowbreak{}tion-specific), but this is
    much more effort.
483
484 You can now write words containing hyphens which are hyphenated
    at other places in the word.
485 For instance, \verb!application=specific! gets
    application=specific.
486 This is enabled by an additional configuration of the babel
    package.

```

D. Typesetting Units

Numbers can written plain text (such as 100), by using the siunitx package like that: 100 $\frac{\text{km}}{\text{h}}$, or by using plain L^AT_EX (and math mode): 100 $\frac{\text{km}}{\text{h}}$.

Corresponding L^AT_EX code of paper-conference.tex

```

492 Numbers can written plain text (such as 100), by using the
    siunitx package like that:
493 \SI{100}{\km\per\hour},
494 or by using plain \LaTeX{} (and math mode):
495 $100 \frac{\mathit{km}}{h}$.

```

5 % of 10 kg

Corresponding L^AT_EX code of paper-conference.tex

```

499 \SI{5}{\percent} of \SI{10}{kg}

```

Numbers are automatically grouped: 123 456.

Corresponding L^AT_EX code of paper-conference.tex

```

503 Numbers are automatically grouped: \num{123456}.

```

E. Surrounding Text by Quotes

Please use the “enquote command” to quote something. Quoting with “quote” or “quote” also works.

Corresponding L^AT_EX code of paper-conference.tex

```

509 Please use the \enquote{enquote command} to quote something.
510 Quoting with "quote" or ``quote'' also works.

```

F. Cleveref examples

Cleveref demonstration: Cref at beginning of sentence, cref in all other cases.

Figure 1 shows a simple fact, although Figure 1 could also show something else.

Figure 2 shows a simple fact, although Figure 2 could also show something else.

Section III-F shows a simple fact, although Section III-F could also show something else.

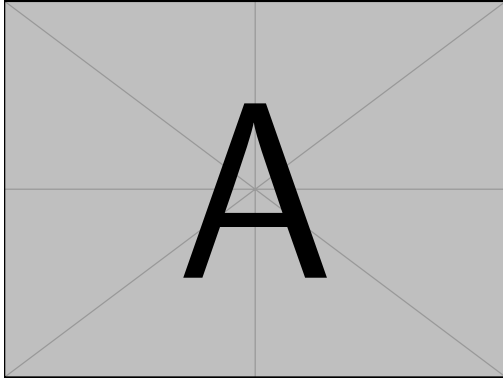


Figure 1. Example figure for cref demo

Heading1	Heading2
One	Two
Thee	Four

Figure 2. Example table for cref demo

Corresponding L^AT_EX code of paper-conference.tex

```

541 \Cref{fig:ex:cref} shows a simple fact, although
    \cref{fig:ex:cref} could also show something else.
542
543 \Cref{tab:ex:cref} shows a simple fact, although
    \cref{tab:ex:cref} could also show something else.
544
545 \Cref{sec:ex:cref} shows a simple fact, although
    \cref{sec:ex:cref} could also show something else.
```

G. Figures

Figure 3 shows something interesting.



Figure 3. Simple Figure. Based on Scharrer [3].

Corresponding L^AT_EX code of paper-conference.tex

```

551 \Cref{fig:label} shows something interesting.
552
553 \begin{figure}
554   \centering
555   \includegraphics[width=.8\linewidth]{example-image-golden}
556   \caption[Simple Figure]{Simple Figure. Based on \cit{mwe}.}
557   \label{fig:label}
558 \end{figure}
```

One can span a figure across multiple columns by using `\begin{figure*}`. See Figure 4 as an example.

Corresponding L^AT_EX code of paper-conference.tex

```

566 \begin{figure*}
567   \centering
568   % note that \textwidth is used instead of \linewidth
569   % This ensures that the graphics width is 60% of the "page"
    (text block), and not just 60% of the current text column
570   % See https://tex.stackexchange.com/a/17085/9075 for details
571   \includegraphics[width=.6\textwidth]{example-image-16x9}
572   \caption{16x9 Figure}
573   \label{fig:16x9}
574 \end{figure*}
```

H. Sub Figures

An example of two sub figures is shown in Figure 5.

Corresponding L^AT_EX code of paper-conference.tex

```

583 \begin{figure*}[!b]
584   \centering
585   \subfloat[Case
    I]{\includegraphics[width=.4\linewidth]{example-image-a}}%
586   \label{fig:first_case}}
587   \hfil
588   \subfloat[Case
    II]{\includegraphics[width=.4\linewidth]{example-image-b}}%
589   \label{fig:second_case}}
590   \caption{Example figure with two sub figures.}
591   \label{fig:two_sub_figures}
592 \end{figure*}
```

Note that often IEEE papers with subfigures do not employ subfigure captions (using the optional argument to `\subfloat[]`), but instead will reference/describe all of them (a), (b), etc., within the main caption. Be aware that for `subfig.sty` to generate the (a), (b), etc., subfigure labels, the optional argument to `\subfloat` must be present. If a subcaption is not desired, just leave its contents blank, e.g., `\subfloat[]`. An example is shown in Figure 6.

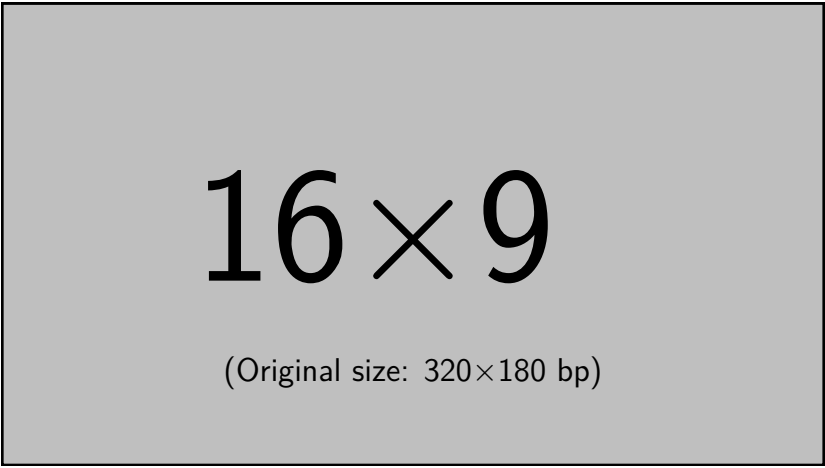


Figure 4. 16x9 Figure

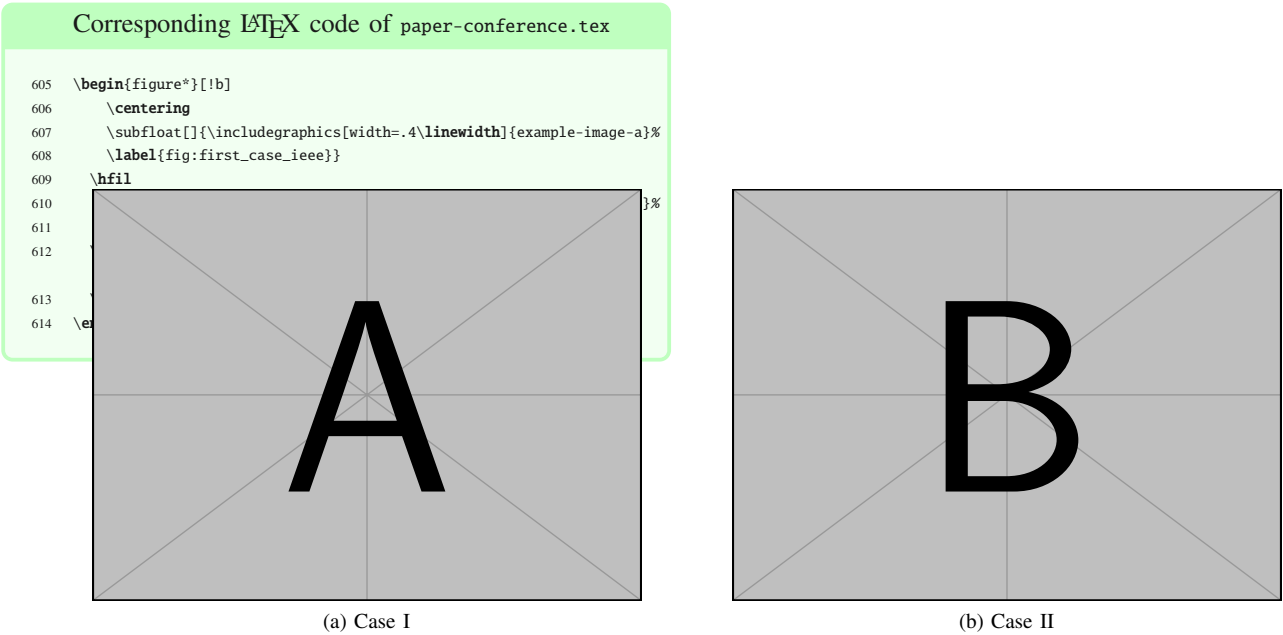


Figure 5. Example figure with two sub figures.

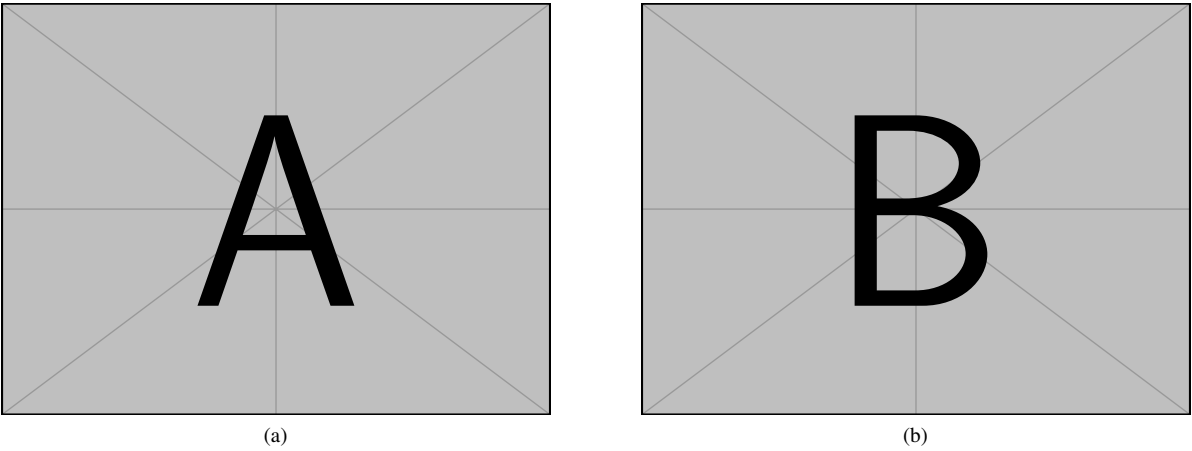


Figure 6. Example figure with two sub figures. IEEE style. (a) The first case. (b) The second case.

Figure 7. Simple Table

Heading1	Heading2
One Thee	Two Four

Figure 8. Table with diagonal line

Diag Column Head I	Diag Column Head II	Second	Third
		foo	bar

I. Tables

Note that IEEE does not support `\begin{table}`, one has to use `\begin{figure}`.

Corresponding L^AT_EX code of paper-conference.tex

```
622 \begin{figure}
623 \caption{Simple Table}
624 \label{tab:simple}
625 \centering
626 \begin{tabular}{ll}
627 \toprule
628 Heading1 & Heading2 \\
629 \midrule
630 One & Two \\
631 Thee & Four \\
632 \bottomrule
633 \end{tabular}
634 \end{figure}
```

Corresponding L^AT_EX code of paper-conference.tex

```
638 % Source: https://tex.stackexchange.com/a/468994/9075
639 \begin{figure}
640 \caption{Table with diagonal line}
641 \label{tab:diag}
642 \begin{center}
643 \begin{tabular}{|l|c|c|}
644 \hline
645 \diagbox[width=10em]{Diag\Column Head I}{Diag Column\Head II} &
        Second & Third \\
646 \hline
647 & foo & bar \\
648 \hline
649 \end{tabular}
650 \end{center}
651 \end{figure}
```

J. Source Code

Listing 1 shows source code written in XML. Line 2 contains a comment.

```
1 <listing name="example">
2 <!-- comment -->
3 <content>not interesting</content>
4 </listing>
```

Listing 1. Example XML Listing

```
1 <listing name="example">
2 Floating
3 </listing>
```

Listing 2. Example XML listing – placed as floating figure

```
1 {
2 key: "value"
3 }
```

Listing 3. Example JSON listing – placed as floating figure

Corresponding L^AT_EX code of paper-conference.tex

```
658 \Cref{lst:XML} shows source code written in XML.
659 \Cref{line:comment} contains a comment.
660
661 \begin{lstlisting}[
662 language=XML,
663 caption={Example XML Listing},
664 label={lst:XML}]
665 <listing name="example">
666 <!-- comment --> (* \label{line:comment} *)
667 <content>not interesting</content>
668 </listing>
669 \end{lstlisting}
```

One can also add `float` as parameter to have the listing floating. Listing 2 shows the floating listing.

Corresponding L^AT_EX code of paper-conference.tex

```
676 \begin{lstlisting}[
677 % one can adjust spacing here if required
678 % aboveskip=2.5\baselineskip,
679 % belowskip=-.8\baselineskip,
680 float,
681 language=XML,
682 caption={Example XML listing -- placed as floating figure},
683 label={lst:flXML}]
684 <listing name="example">
685 Floating
686 </listing>
687 \end{lstlisting}
```

One can also typeset JSON as shown in Listing 3.

Corresponding L^AT_EX code of paper-conference.tex

```
693 \begin{lstlisting}[
694 float,
695 language=json,
696 caption={Example JSON listing -- placed as floating figure},
697 label={lst:json}]
698 {
699 key: "value"
700 }
701 \end{lstlisting}
```

Java is also possible as shown in Listing 4.

```

1 public class Hello {
2     public static void main (String[] args) {
3         System.out.println("Hello World!");
4     }
5 }

```

Listing 4. Example Java listing

Corresponding L^AT_EX code of paper-conference.tex

```

707 \begin{lstlisting}[
708     caption={Example Java listing},
709     label=lst:java,
710     language=Java,
711     float]
712 public class Hello {
713     public static void main (String[] args) {
714         System.out.println("Hello World!");
715     }
716 }
717 \end{lstlisting}

```

K. Itemization

One can list items as follows:

- Item One
- Item Two

Corresponding L^AT_EX code of paper-conference.tex

```

725 \begin{itemize}
726 \item Item One
727 \item Item Two
728 \end{itemize}

```

With the package paralist, one can create itemizations with lesser spacing:

- Item One
- Item Two

Corresponding L^AT_EX code of paper-conference.tex

```

734 \begin{compactitem}
735 \item Item One
736 \item Item Two
737 \end{compactitem}

```

One can enumerate items as follows:

- 1) Item One
- 2) Item Two

Corresponding L^AT_EX code of paper-conference.tex

```

743 \begin{enumerate}
744 \item Item One
745 \item Item Two
746 \end{enumerate}

```

With the package paralist, one can create enumerations with lesser spacing:

- 1) Item One
- 2) Item Two

Corresponding L^AT_EX code of paper-conference.tex

```

752 \begin{compactenum}
753 \item Item One
754 \item Item Two
755 \end{compactenum}

```

With paralist, one can even have all items typset after each other and have them clean in the tex document:

1) All these items... 2) ...appear in one line 3) This is enabled by the paralist package.

Corresponding L^AT_EX code of paper-conference.tex

```

761 \begin{inparaenum}
762 \item All these items...
763 \item ...appear in one line
764 \item This is enabled by the paralist package.
765 \end{inparaenum}

```

L. Other Features

The words “workflow” and “dwarflake” can be copied from the PDF and pasted to a text file.

Corresponding L^AT_EX code of paper-conference.tex

```

771 The words \enquote{workflow} and \enquote{dwarflake} can be
copied from the PDF and pasted to a text file.

```

The symbol for powerset is now correct: \wp and not a Weierstrass p (\wp).

$\wp(1, 2, 3)$

Corresponding L^AT_EX code of paper-conference.tex

```

775 The symbol for powerset is now correct:  $\wp$  and not a
Weierstrass p ( $\wp$ ).
776
777  $\wp(\{1, 2, 3\})$ 

```

Brackets work as designed: `<test>` One can also input backquotes in verbatim text: ``test``.

Corresponding L^AT_EX code of paper-conference.tex

```

781 Brackets work as designed:
782 <test>
783 One can also input backquotes in verbatim text: \verb`test`.

```

IV. CONCLUSION AND OUTLOOK

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetur id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean

faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

ACKNOWLEDGMENT

Identification of funding sources and other support, and thanks to individuals and groups that assisted in the research and the preparation of the work should be included in an acknowledgment section, which is placed just before the reference section in your document [4].

In the bibliography, use `\textsuperscript` for “st”, “nd”, ...: E.g., “The 2nd conference on examples”. When you use JabRef, you can use the clean up command to achieve that. See <https://help.jabref.org/en/CleanupEntries> for an overview of the cleanup functionality.

REFERENCES

- [1] O. Kopp *et al.*, “Winery – A Modeling Tool for TOSCA-based Cloud Applications,” in *Proceedings of 11th International Conference on Service-Oriented Computing (ICSOC’13)*, ser. LNCS, vol. 8274. Springer Berlin Heidelberg, 2013, pp. 700–704.
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- [3] M. Scharrer, *The mwe Package*, 2017. [Online]. Available: <http://texdoc.net/mwe>
- [4] B. Veytsman, “Latex class for the association for computing machinery – acknowledgement information,” Aug. 2021. [Online]. Available: <https://github.com/borisveytsman/acmart/blob/1704c8bf7eee92a1515ff755f5118b6a22bb1f8e/samples/samples.dtx#L709>

All links were last followed on October 5, 2020.