

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 (??). 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 ^A T _E X	code	of
			paper-conference-minted.tex
370	One sentence per line.		
371	This rule is important for the usage of version control		
	↪ systems.		
372	A new line is generated with a blank line.		
373	As you would do in Word:		
374	New paragraphs are generated by pressing enter.		
375	In LaTeX, this does not lead to a new paragraph as LaTeX joins		
	↪ subsequent lines.		
376	In case you want a new paragraph, just press enter twice (!).		
377	This leads to an empty line.		
378	In word, there is the functionality to press shift and enter.		
379	This leads to a hard line break.		
380	The text starts at the beginning of a new line.		
381	In LaTeX, you can do that by using two backslashes		
	↪ (<code>\textbackslash\textbackslash</code>).		
382	This is rarely used.		
383			
384	Please do <code>\textit{not}</code> use two backslashes for new paragraphs.		
385	For instance, this sentence belongs to the same paragraph,		
	↪ whereas the last one started a new one.		
386	A long motivation for that is provided at		
	↪ <code>\url{http://loopspace.mathforge.org/HowDidIDoThat/TeX/VCS/#section.3}</code>		

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 ^A T _E X	code	of
			paper-conference-minted.tex
394	<code>\begin{mindflow}</code>		
395	This is a small note.		
396	<code>\end{mindflow}</code>		

C. Hyphenation

L^AT_EX automatically hyphenates words. When using `microtype`, there should be less hypnetations 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 ^A T _E X	code	of
			paper-conference-minted.tex
407	In case you write <code>\enquote{application-specific}</code> , then the		
	↪ word will only be hyphenated at the dash.		
408	You can also write <code>\verb!applica\allowbreak{tion-specific!}</code>		
	↪ (result: applica\allowbreak{tion-specific), but this is		
	↪ much more effort.		
409			
410	You can now write words containing hyphens which are		
	↪ hyphenated at other places in the word.		
411	For instance, <code>\verb!application"=specific1</code> gets		
	↪ <code>application"=specific</code> .		
412	This is enabled by an additional configuration of the <code>babel</code>		
	↪ 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`): $100 \frac{km}{h}$.

Corresponding	L ^A T _E X	code	of
			paper-conference-minted.tex
418	Numbers can written plain text (such as 100), by using the		
	↪ <code>siunitx</code> package like that:		
419	<code>\SI{100}{\km\per\hour}</code> ,		
420	or by using plain <code>\LaTeX{}</code> (and <code>math mode</code>):		
421	<code>\SI{100}{\frac{\mathit{km}}{h}}</code> .		

5 % of 10 kg

Corresponding	L ^A T _E X	code	of
			paper-conference-minted.tex
425	<code>\SI{5}{\percent}</code> of <code>\SI{10}{kg}</code>		

Numbers are automatically grouped: 123 456.

Corresponding	L ^A T _E X	code	of
			paper-conference-minted.tex
429	Numbers are automatically grouped: <code>\num{123456}</code> .		

E. Surrounding Text by Quotes

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

Corresponding	L ^A T _E X	code	of
			paper-conference-minted.tex
435	Please use the <code>\enquote{enquote command}</code> to quote something.		
436	Quoting with “quote” or “quote” also works.		
437			

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.

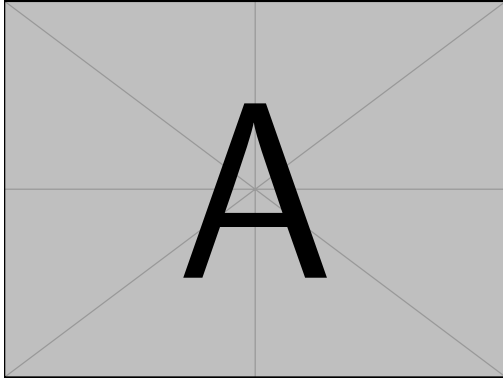


Figure 1: Example figure for cref demo

Heading1	Heading2
One	Two
Thee	Four

Figure 2: Example table for cref demo

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.

Corresponding \LaTeX code of
paper-conference-minted.tex

```

467 \Cref{fig:ex:cref} shows a simple fact, although
    ↳ \cref{fig:ex:cref} could also show something else.
468
469 \Cref{tab:ex:cref} shows a simple fact, although
    ↳ \cref{tab:ex:cref} could also show something else.
470
471 \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 \LaTeX code of
paper-conference-minted.tex

```

477 \Cref{fig:label} shows something interesting.
478
479 \begin{figure}
480   \centering
481   \includegraphics[width=.8\linewidth]{example-image-golden}
482   \caption[Simple Figure]{Simple Figure. Based on
    ↳ \citet{mwe}.}
483   \label{fig:label}
484 \end{figure}

```

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

Corresponding \LaTeX code of
paper-conference-minted.tex

```

492 \begin{figure*}
493   \centering
494   % note that \textwidth is used instead of \linewidth
495   % This ensures that the graphics width is 60% of the "page"
    ↳ (text block), and not just 60% of the current text
    ↳ column
496   % See https://tex.stackexchange.com/a/17085/9075 for details
497   \includegraphics[width=.6\textwidth]{example-image-16x9}
498   \caption{16x9 Figure}
499   \label{fig:16x9}
500 \end{figure*}

```

H. Sub Figures

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

Corresponding \LaTeX code of
paper-conference-minted.tex

```

509 \begin{figure*}[!b]
510   \centering
511   \subfloat[Case
    ↳ I]{\includegraphics[width=.4\linewidth]{example-image-a}}%
512   \label{fig:first_case}}
513   \hfil
514   \subfloat[Case
    ↳ II]{\includegraphics[width=.4\linewidth]{example-image-b}}%
515   \label{fig:second_case}}
516   \caption{Example figure with two sub figures.}
517   \label{fig:two_sub_figures}
518 \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.

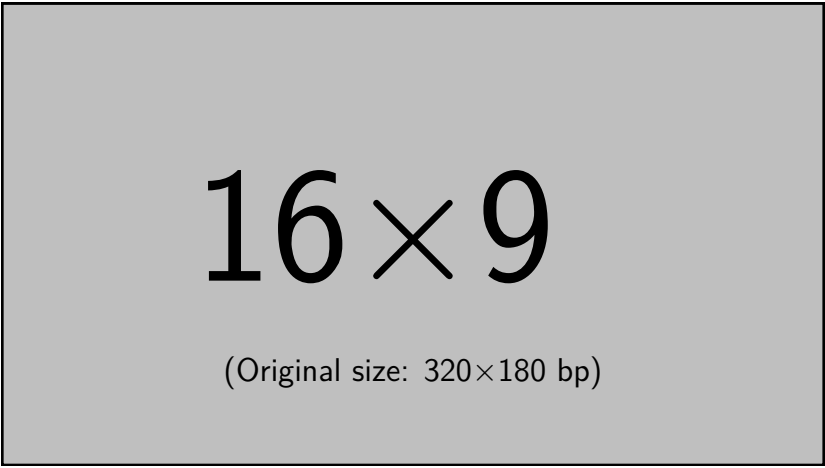


Figure 4: 16x9 Figure

Corresponding L^AT_EX code of
paper-conference-minted.tex

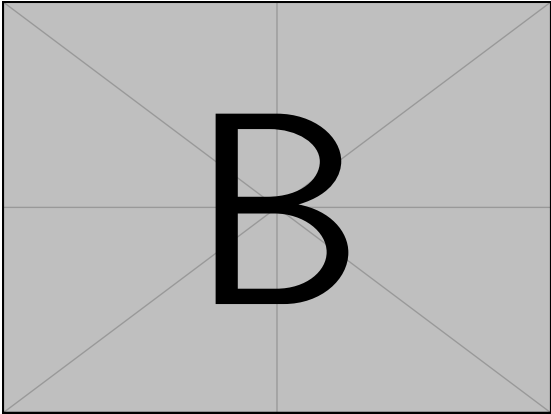
```
531 \begin{figure*}[]!b]
532 \centering
533 ↪ \subfloat[]{\includegraphics[width=.4\linewidth]{example-image-a}%
534
535
536
537
538
539
540
```

image-b}%

(a) Case I

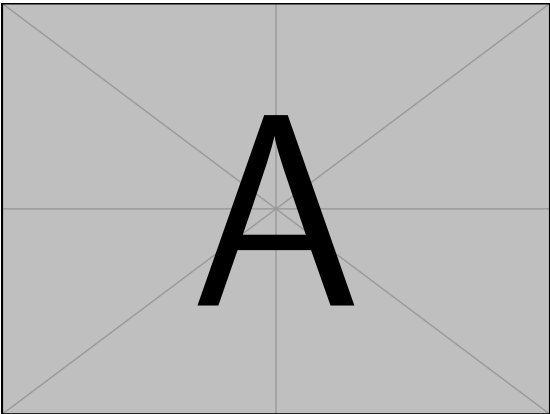
I. Tables

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

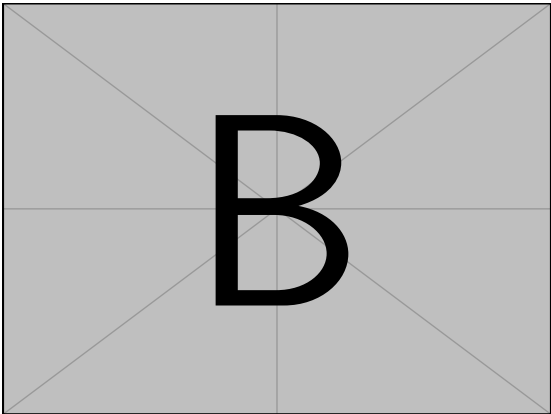


(b) Case II

Figure 5: Example figure with two sub figures.



(a)



(b)

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

Corresponding \LaTeX code of
paper-conference-minted.tex

```

548 \begin{figure}
549 \caption{Simple Table}
550 \label{tab:simple}
551 \centering
552 \begin{tabular}{ll}
553 \toprule
554 Heading1 & Heading2 \\
555 \midrule
556 One & Two \\
557 Thee & Four \\
558 \bottomrule
559 \end{tabular}
560 \end{figure}

```

Corresponding \LaTeX code of
paper-conference-minted.tex

```

564 % Source: https://tex.stackexchange.com/a/468994/9075
565 \begin{figure}
566 \caption{Table with diagonal line}
567 \label{tab:diag}
568 \begin{center}
569 \begin{tabular}{|l|c|c|}
570 \hline
571 \diagbox[width=10em]{Diag\Column Head I}{Diag Column\Head
572 \leftrightarrow II} & Second & Third \\
573 \hline
574 & foo & bar \\
575 \hline
576 \end{tabular}
577 \end{center}
578 \end{figure}

```

J. Source Code

minted is a sophisticated packages to enable properly highlighted listings. It uses the pygments library, which in turn requires Python.

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

```

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

```

List. 1: Example XML listing using minted

Corresponding \LaTeX code of
paper-conference-minted.tex

```

587 \Cref{lst:XML} shows source code written in XML.
588 \refline{line:comment} contains a comment.
589
590 \begin{listing}[htbp]
591 \begin{minted}[linenos=true,escapeinside=||]{xml}
592 <listing name="example">
593   <!-- comment --> |\labelline{line:comment}|
594   <content>not interesting</content>
595 </listing>
596 \end{minted}
597 \caption{Example XML listing using minted}
598 \label{lst:XML}
599 \end{listing}

```

One can also typeset JSON as shown in Listing 2.

```

1 {
2   key: "value"
3 }

```

List. 2: Example JSON listing using minted

Corresponding \LaTeX code of
paper-conference-minted.tex

```

605 \begin{listing}[htbp]
606 \begin{minted}[linenos=true,escapeinside=||]{json}
607 {
608   key: "value"
609 }
610 \end{minted}
611 \caption{Example JSON listing using minted}
612 \label{lst:flJSON}
613 \end{listing}

```

Java is also possible as shown in ??.

```

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

```

List. 3: Java code rendered using minted

Corresponding \LaTeX code of
paper-conference-minted.tex

```
619 \begin{listing}[htbp]
620 \begin{minted}[linenos=true,escapeinside=||]{java}
621 public class Hello {
622     public static void main (String[] args) {
623         System.out.println("Hello World!");
624     }
625 }
626 \end{minted}
627 \caption{Java code rendered using minted}
628 \label{lst:java}
629 \end{listing}
```

K. Itemization

One can list items as follows:

- Item One
- Item Two

Corresponding \LaTeX code of
paper-conference-minted.tex

```
637 \begin{itemize}
638 \item Item One
639 \item Item Two
640 \end{itemize}
```

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

- Item One
- Item Two

Corresponding \LaTeX code of
paper-conference-minted.tex

```
646 \begin{compactitem}
647 \item Item One
648 \item Item Two
649 \end{compactitem}
```

One can enumerate items as follows:

- 1) Item One
- 2) Item Two

Corresponding \LaTeX code of
paper-conference-minted.tex

```
655 \begin{enumerate}
656 \item Item One
657 \item Item Two
658 \end{enumerate}
```

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

- 1) Item One
- 2) Item Two

Corresponding \LaTeX code of
paper-conference-minted.tex

```
664 \begin{compactenum}
665 \item Item One
666 \item Item Two
667 \end{compactenum}
```

With paralist, one can even have all items typeset 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 \LaTeX code of
paper-conference-minted.tex

```
673 \begin{inparaenum}
674 \item All these items...
675 \item ...appear in one line
676 \item This is enabled by the paralist package.
677 \end{inparaenum}
```

L. Other Features

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

Corresponding \LaTeX code of
paper-conference-minted.tex

```
683 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 \LaTeX code of
paper-conference-minted.tex

```
687 The symbol for powerset is now correct:  $\wp$  and not a
↪ Weierstrass p ( $\wp$ ).
688
689  $\wp(\{1, 2, 3\})$ 
```

Brackets work as designed: $\langle \text{test} \rangle$ One can also input backquotes in verbatim text: ``test``.

Corresponding \LaTeX code of
paper-conference-minted.tex

```
693 Brackets work as designed:
694  $\langle \text{test} \rangle$ 
695 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

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All links were last followed on October 5, 2020.