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Statement in Lieu of an Oath

I hereby confirm that I have written this thesis on my own and that I have not used any other media or materials than the ones referred to in this thesis.

Saarbrücken, [submission date]

Declaration of Consent

I agree to make both versions of my thesis (with a passing grade) accessible to the public by having them added to the library of the Computer Science Department.

Saarbrücken, [submission date]

Quick overview of useful LateX Commands

This chapter should not appear in the final version of the thesis.

0.1 Sidenotes

One of the most prominent and distinctive features of this style is the extensive use of sidenotes. There is a wide margin to provide ample room for sidenotes and small figures. Any `\footnotes` will automatically be converted to sidenotes.[1] If you'd like to place ancillary information in the margin without the sidenote mark (the superscript number), you can use the `\marginnote` command.

[1] This is a sidenote that was entered using the `\footnote` command.

This is a margin note. Notice that there isn't a number preceding the note, and there is no number in the main text where this note was written.

The specification of the `\sidenote` command is:

`\sidenote[`⟨*number*⟩`][`⟨*offset*⟩`]{`*Sidenote text.*`}`

Both the ⟨*number*⟩ and ⟨*offset*⟩ arguments are optional. If you provide a ⟨*number*⟩ argument, then that number will be used as the sidenote number. It will change of the number of the current sidenote only and will not affect the numbering sequence of subsequent sidenotes.

Sometimes a sidenote may run over the top of other text or graphics in the margin space. If this happens, you can adjust the vertical position of the sidenote by providing a dimension in the ⟨*offset*⟩ argument. Some examples of valid dimensions are:

```
1.0in    2.54cm    254mm    6\baselineskip
```

If the dimension is positive it will push the sidenote down the page; if the dimension is negative, it will move the sidenote up the page.

While both the ⟨*number*⟩ and ⟨*offset*⟩ arguments are optional, they must be provided in order. To adjust the vertical position of the sidenote while leaving the sidenote number alone, use the following syntax:

`\sidenote[][`⟨*offset*⟩`]{`*Sidenote text.*`}`

The empty brackets tell the `\sidenote` command to use the default sidenote number.

If you only want to change the sidenote number, however, you

may completely omit the ⟨*offset*⟩ argument:

`\sidenote[`⟨*number*⟩`]{`*Sidenote text.*`}`

The `\marginnote` command has a similar *offset* argument:

`\marginnote[`⟨*offset*⟩`]{`*Margin note text.*`}`

0.2 Citations

To cite previous work or various other sources (websites, APIs, etc.), you can use the command:

`\cite{`*citation entry*`}`

The citation entry must be part of your .bib file (by default *bibliography.tex* in the *backmatter* folder). To cite multiple source at once, you can add a coma between them:

`\cite{`*entry1, entry2, entry3, ...*`}`

Here is an example [6] and here is another [3, 4, 5].

0.3 Tables

You can simply create tables, as the one shown below.

Table 1: This is the caption of a table. This table lists all the various font sizes available.

LaTeX size	Font size	Leading	Used for
`\tiny`	5	6	sidenote numbers
`\scriptsize`	7	8	–
`\footnotesize`	8	10	sidenotes, captions
`\small`	9	12	quote, quotation, and verse environments
`\normalsize`	10	14	body text
`\large`	11	15	B-heads
`\Large`	12	16	A-heads, TOC entries, author, date
`\LARGE`	14	18	handout title
`\huge`	20	30	chapter heads
`\Huge`	24	36	part titles

To refer to a table, you can use the `\ref{<table's label>}` command like this Table 1.

0.4 Figures

Images and graphics play an integral role in Tufte's work. In addition to the standard `figure` and `tabular` environments, this style provides special figure and table environments for full-width floats.

Full page–width figures and tables may be placed in `figure*` or `table*` environments. To place figures or tables in the margin, use the `marginfigure` or `margintable` environments as follows (see figure 1):

```
\begin{marginfigure}
    \includegraphics{helix}
    \caption{This is a margin figure.}
```

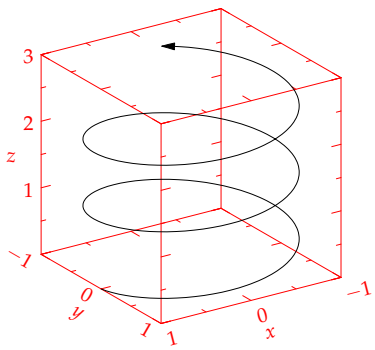


Figure 1: This is a margin figure. The helix is defined by $x = \cos(2\pi z)$, $y = \sin(2\pi z)$, and $z = [0, 2.7]$. The figure was drawn using Asymptote (`http://asymptote.sf.net/`).

```
    \label{fig:marginfig}
\end{marginfigure}
```

The `marginfigure` and `margintable` environments accept an optional parameter ⟨*offset*⟩ that adjusts the vertical position of the figure or table. See the "Sidenotes" section above for examples. The specifications are:

```
\begin{marginfigure}[⟨offset⟩]
    ...
\end{marginfigure}

\begin{margintable}[⟨offset⟩]
    ...
\end{margintable}
```

Figure 2 is an example of the `figure*` environment and figure 3 is an example of the normal `figure` environment.

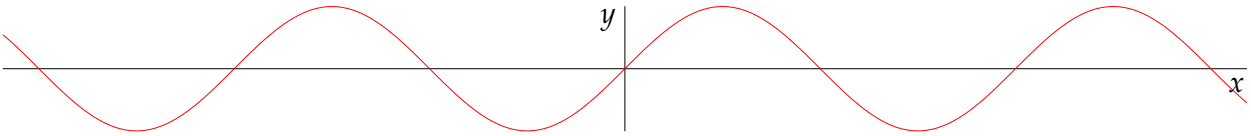


Figure 2: This graph shows $y = \sin x$ from about $x = [-10, 10]$. Notice that this figure takes up the full page width.

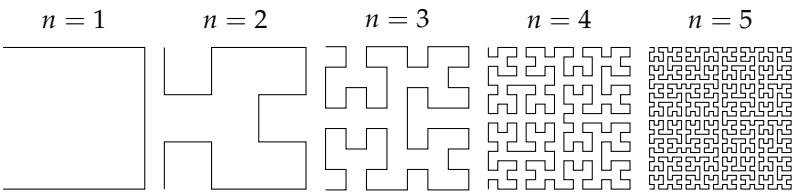


Figure 3: Hilbert curves of various degrees n. Notice that this figure only takes up the main textblock width.

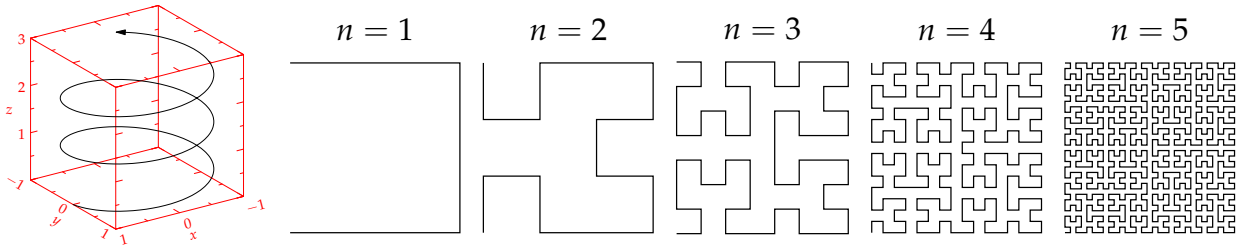
As with sidenotes and marginnotes, a caption may sometimes require vertical adjustment. The `\caption` command now takes a second optional argument that enables you to do this by providing a dimension ⟨*offset*⟩. You may specify the caption in any one of the following forms:

```
\caption{long caption}
\caption[short caption]{long caption}
\caption[][⟨offset⟩]{long caption}
\caption[short caption][⟨offset⟩]{long caption}
```

A positive ⟨*offset*⟩ will push the caption down the page. The short caption, if provided, is what appears in the list of figures/tables, otherwise the "long" caption appears there. Note that although the arguments ⟨*short caption*⟩ and ⟨*offset*⟩ are both optional, they must be provided in order. Thus, to specify an ⟨*offset*⟩ without specifying a ⟨*short caption*⟩, you must include the first set of empty brackets `[]`, which tell `\caption` to use the default "long" caption. As an example, the caption to figure 3 above was given in the form

```
\caption[Hilbert curves...][5em]{Hilbert curves...}
```

Pictures can also be placed next to each other:



(a) (b)

Figure 4: PIctures are aligned on the same line, and automatically annotated with letters.

0.5 Full-width text blocks

In addition to the new float types, there is a `fullwidth` environment that stretches across the main text block and the sidenotes area.

```
\begin{fullwidth}
Lorem ipsum dolor sit amet...
\end{fullwidth}
```

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer 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.

0.6 Sections and subsections

This is a section. Sections and subsections appear in the Table of Contents (ToC), so rely heavily on them to structure your text and your argumentation.

0.6.1 This is a first subsection...

0.6.2 ... and here is a second

Acknowledgments

Abstract

In this chapter, you should concisely explain why is your work important, and how do you contribute to research with your work.

The following structure is simply a suggestion that is inline with most thesis outlines. It is by no mean mandatory to keep this structure for your final manuscript. You must adapt this structure to emphasize on your contributions and the quality of your work.

Contents

1

Introduction

Why is your work important? This section should contain at least:

- Motivation, Context
- Challenges
- Goal
- Scientific Contributions
- Structure of the Thesis

2

Related Work

- Place your contribution in perspective (Go from general to specific, back to general)
- What is the context of your work?
- How did researchers tackle the challenge at hand in the past?
- How does your contributions relate to previous work?

3

Concept

- Identify important aspects of this concept, and structure following those
- Make sure to justify your design decisions
- Avoid user manual-like description
- For each aspect, make sure to clarify the original contribution

4
Implementation

- Dive into the details of your work without loosing the big picture
- Is the structure of the implementation understandable and correctly documented?
- Justify your implementation choices based on previous work
- Did the implementation follow conventional methods? (e.g., user-centered design)
- Provide sufficient technical information such that an informed reader (computer scientist with Bachelor's degree) can replicate the implementation
- Avoid too many details beyond; focus on challenging questions and briefly describe the rest

5
Evaluation

- How did you evaluate your work?
- Is the type of evaluation adequate to the context of your research?

6

Discussion

- Discuss the results of your evaluation(s) and reflect on your work
- You might want to discuss future work here

7
Conclusion

This concludes the thesis - you should discuss future work here if you did not in the previous section.

Bibliography

[1] Robert Bringhurst. 2005. The Elements of Typography (3.1 ed.). Hartley & Marks.

[2] Frank Mittelbach and Michel Goossens. 2004. The LaTeX Companion (second ed.). Addison–Wesley.

[3] Edward R. Tufte. 1990. Envisioning Information. Graphics Press, Cheshire, Connecticut.

[4] Edward R. Tufte. 1997. Visual Explanations. Graphics Press, Cheshire, Connecticut.

[5] Edward R. Tufte. 2001. The Visual Display of Quantitative Information. Graphics Press, Cheshire, Connecticut.

[6] Edward R. Tufte. 2006. Beautiful Evidence (first ed.). Graphics Press, LLC.

[7] Hideo Umeki. 2008. The `geometry` package. `http://ctan.org/pkg/geometry`. (Dec. 2008).