

# Best Practices – LaTeX

For Master Thesis

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```

\documentclass[12pt,a4paper,oneside,draft]{report}

\usepackage[option]{package}

\begin{document}

% Introductory chapters
\chapter{Preface}
% ...

\mainmatter
\chapter{First chapter}
% ...

\appendix
\chapter{First Appendix}
50~€

\backmatter
\chapter{Last note}

\bibliographystyle{plain}
\bibliography{bib}

\end{document}

```

Preamble

Content

Bibliography

# Referencing Other Work – Where to find them?

- Academic Documents
  - [kuleuven.ezproxy.kuleuven.be](http://kuleuven.ezproxy.kuleuven.be)
  - IEEE Xplore
  - Google Scholar
  - Limo

# Referencing Other Work – How to LaTeX?

## What is it?

LaTeX Package

Processing

Database file

## Who?

natbib

BibTex

.bib

## What is it doing?

Define \cite in .tex document

Bridge together .bib and .tex

Storage of references

.bib

	Key	forename surname and ...	
@misc			or
@techreport		surname, forename and ...	

```
@article{greenwade93,  
  author   = "George D. Greenwade",  
  title    = "The {C}omprehensive {T}ex {A}rchive {N}etwork ({CTAN})",  
  year     = "1993",  
  journal  = "TUGBoat",  
  volume   = "14",  
  number   = "3",  
  pages    = "342--351"  
}
```

—— {{Keep case of Letters}}

```
\cite{greenwade93}
```

# Get .bib file

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scholar.google.com

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continuous sensing >

TIME SYNCHRONIZATION >

Source Identifier

Lirias

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Publication status

Published

Source ID

LIRIAS2732203

Relation

2019 IEEE Sensors Applications Symposium (SAS); 2019; pp. -

Links

Callebaut, Gilles [KU Leuven ID] >

Ottoy, Geoffrey [KU Leuven ID] >

De Strycker, Lieven [KU Leuven ID] >

Altmetrics

?

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Conference proceedings (6)

Software (3)

Journal articles (2)

Internet publication (2)

Abstracts/Presentations/Posters (1)

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Creation Date


From 2017 To 2019 Refine

Publication status

Published (6)

Accepted (4)

User profiles for Gilles Callebaut



Gilles Callebaut

KU Leuven

Verified email at kuleuven.be

Cited by 6

Cross-layer framework and optimization for IoT Nodes

G Callebaut, G Ottoy, L Van der Perre - arXiv preprint arXiv:1806.08624 (2018)

Both physical and MAC-layer need to be jointly optimized for efficient use of the energy budget of IoT Nodes. Therefore, a cross-layer design is imperative to design Area networks (LPWANs). In the present paper, a cross-layer design is proposed.

☆ ⓘ Cited by 1 Related articles All 4 versions

NativeStorage-A Cordova Plugin

G Callebaut - lirias.kuleuven.be

NativeStorage - A Cordova Plugin. Publisher: Github; http://github.com/kuleuven-lirias/cordova-plugin-nativestorage. Author: Callebaut, Gilles. android, ios, cross-platform tool. Abstract: This plugin is designed to provide a cross-platform tool for storing data on mobile devices.

☆ ⓘ Cited by 1 Related articles

[PDF] Assessment of data storage strategies for cordova

G Callebaut, M Willocx, J Vossaert, ... - ... on Mobile Services

The mobile world is fragmented by a variety of mobile platforms. While native applications can fully exploit the capabilities of the mobile platform, limited or no code can be shared between different platforms.

☆ ⓘ Cited by 1 Related articles All 2 versions

Cite

MLA Callebaut, Gilles, Geoffrey Ottoy, and Liesbet Van der Perre. "Cross-layer framework and optimization for efficient use of the energy budget of IoT Nodes." *arXiv preprint arXiv:1806.08624* (2018).

APA Callebaut, G., Ottoy, G., & Van der Perre, L. (2018). Cross-layer framework and optimization for efficient use of the energy budget of IoT Nodes. *arXiv preprint arXiv:1806.08624* (2018).

Chicago Callebaut, Gilles, Geoffrey Ottoy, and Liesbet Van der Perre. "Cross-layer framework and optimization for efficient use of the energy budget of IoT Nodes." *arXiv preprint arXiv:1806.08624* (2018).

Harvard Callebaut, G., Ottoy, G. and Van der Perre, L., 2018. Cross-layer framework and optimization for efficient use of the energy budget of IoT Nodes. *arXiv preprint arXiv:1806.08624* (2018).

Vancouver Callebaut G, Ottoy G, Van der Perre L. Cross-layer framework and optimization for efficient use of the energy budget of IoT Nodes. *arXiv preprint arXiv:1806.08624*. 2018.

BibTeX

EndNote

RefMan

RefWorks

# How to use?

Citation Style

```
%in the preamble
```

```
%-----
```

```
\usepackage[square,numbers]{natbib} % use [1] notation
```

```
\bibliographystyle{IEEEtranN} % how formatted in bibliography
```

```
%-----
```

```
%Where the bibliography will be printed
```

```
\bibliography{bibfile}
```

Bibliography Style

# Abbreviations

```
\usepackage[acronym]{glossaries}

\makeglossaries

\newacronym{iot}{IoT}{Internet-of-Things} % default expression for defining a new acronym
\newacronym[plural=LPWANs,firstplural=Low-Power Wide-Area Networks (LPWANs)]{lpwan}{LPWAN}{Low-Power Wide-Area Network}

\begin{document}
\gls{iot}
\glspl{lpwan}
\acrlong{iot}
\acrshort{iot}
\acrfull{iot} % outputs: Internet-of-Things (IoT)
\end{document}
```



# Tabular – Fixed Column Width

```
\begin{center}
  \begin{tabular}{l l l p{5cm}}
    \hline
    Day & Min Temp & Max Temp & Summary \\ \hline
    Monday & 11C & 22C & A clear day with lots of sunshine.
    However, the strong breeze will bring down the temperature.
    Tuesday & 9C & 19C & Cloudy with rain, across many northern
    across most of Scotland and Northern Ireland,
    but rain reaching the far northwest. \\ \hline
    Wednesday & 10C & 21C & Rain will still linger for the morning.
    Conditions will improve by early afternoon and continue
    throughout the evening. \\
    \hline
  \end{tabular}
\end{center}
```

Day	Min Temp	Max Temp	Summary
Monday	11C	22C	A clear day with lots of sunshine. However, the strong breeze will bring down the temperatures.
Tuesday	9C	19C	Cloudy with rain, across many northern regions. Clear spells across most of Scotland and Northern Ireland, but rain reaching the far northwest.
Wednesday	10C	21C	Rain will still linger for the morning. Conditions will improve by early afternoon and continue throughout the evening.

# Tabularx – Autowidth columns

X specifier

|

```
\begin{tabularx}{\textwidth}{ccccX }
\hline
label 1 & label 2 & label 3 & label 4 & \\
\hline
item 1 & item 2 & item 3 & heel veel tekst
die automatisch schaalt naar de inhoud. & \\
\hline
\end{tabularx}
```

label 1	label 2	label 3	label 4
item 1	item 2	item 3	heel veel tekst die automatisch schaalt naar de inhoud.

# Table – Environment for Tabular(s)

h	Place the float here, i.e., approximately at the same point it occurs in the source text
t	Position at the top of the page.
b	Position at the bottom of the page.
p	Put on a special page for floats only.
!	Override internal parameters LaTeX uses for determining "good" float positions.
H	Places the float at precisely the location in the LaTeX code. Requires the float package

|

```
\begin{table}[position specifier]
  \centering
  \begin{tabular}{|l|}
    ... your table ...
  \end{tabular}
  \caption{This table shows some data}%
  \label{tab:myfirsttable}
\end{table}
```

<https://inf.ethz.ch/personal/markusp/teaching/guides/guide-tables.pdf>

# www.tablesgenerator.com

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	A	B	C	D	E	F	G	H	I	J	K	L
1		\$w = 8\$			\phantom{abc}	\$w = 16\$			\phantom{abc}	\$w = 32\$		
2	\cmidrule{2-4} \cmidrule{6-8} \cmidrule{10-12}	\$t=0\$	\$t=1\$	\$t=2\$		\$t=0\$	\$t=1\$	\$t=2\$		\$t=0\$	\$t=1\$	\$t=2\$
3	\$c\$	0.0790	0.1692	0.2945		0.3670	0.7187	3.1815		-1.0032	-1.7104	-21.7969
4	\$c\$	-0.8651	50.0476	5.9384		-9.0714	297.0923	46.2143		4.3590	34.5809	76.9167
5	\$c\$	124.2756	-50.9612	-14.2721		128.2265	-630.5455	-381.0930		-121.0518	-137.1210	-220.2500
6	\$c\$	0.0357	1.2473	0.2119		0.3593	-0.2755	2.1764		-1.2998	-3.8202	-1.2784
7	\$c\$	-17.9048	-37.1111	8.8591		-30.7381	-9.5952	-3.0000		-11.1631	-5.7108	-15.6728
8	\$c\$	105.5518	232.1160	-94.7351		100.2497	141.2778	-259.7326		52.5745	10.1098	-140.2130

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Result (click "Generate" to refresh)

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```
1 % Please add the following required packages to your document preamble:
2 % \usepackage{booktabs}
3 % \usepackage{graphicx}
4 \begin{table}[]
5 \centering
6 \resizebox{\textwidth}{!}{%
7 \begin{tabular}{@{}lrrrrrrrrrr@{}}
```

# Consistent labels!

<b>ch:</b>	chapter
<b>sec:</b>	section
<b>subsec:</b>	subsection
<b>fig:</b>	figure
<b>tab:</b>	table
<b>eq:</b>	equation
<b>lst:</b>	code listing
<b>itm:</b>	enumerated list item
<b>alg:</b>	algorithm
<b>app:</b>	appendix subsection

# Consistent labels!

<b>ch:</b>	chapter
<b>sec:</b>	section
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<b>eq:</b>	equation
<b>lst:</b>	code listing
<b>itm:</b>	enumerated list item
<b>alg:</b>	algorithm
<b>app:</b>	appendix subsection

```
\cref{fig:example}  
\cref{tab:example}  
\cref{ch:hfdstk1}  
\cref{eq:emc2}
```

Figuur 1.1

Tabel 1.1

Hoofdstuk 1

Vergelijking (1.1)

# SI Units

```
\usepackage{siunitx}
```

```
A  $\text{\SI{45}{\degree}}$  angle or a  $\text{\ang{45}}$ .
```

```
It is  $\text{\SI{17}{\degreeCelsius}}$  outside.
```

```
\num{1000}
```

```
\num{3.45d-4}
```

```
\si{kg.m/s^2} %unit only
```

```
\SI{10}{\percent}
```

```
\SI{68}{kg}
```

A 45° angle or a 45°.

It is 17°C outside.

1000

$3.45 \times 10^{-4}$

kg m/s<sup>2</sup>

10 %

68 kg



# Master Thesis Template KU Leuven

<https://www.overleaf.com/latex/templates/master-thesis-template-ku-leuven/jxshykvppkfd>



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INGENIEURSWETENSCHAPPEN  
TECHNOLOGIECAMPUS GENT

Titel masterproef, maar nu wat langer

Ondertitel (facultatief)

Voornaam ACHTERNAAM

# More Tips and Tricks

- Thesis specific: <https://dramco-edu.github.io/Thesis-Tips-and-Tricks/>
- LaTeX specific: <https://github.com/dramco-edu/LaTeX>