

L^AT_EX PROJECT MANAGEMENT

To be consistent for most L^AT_EX projects, I choose AOS's preprint version as the default, please check <https://vtex-soft.github.io/texsupport.ims-aos/> for more details.

The references are managed externally by Zotero and BBT, exported to BibTeX format, then included via natbib.

1. Font size warnings. Sometimes you will see warnings like

```
LaTeX Font Warning: Font shape 'OML/cmm/m/it' in size <5.5> not available
(Font) size <5> substituted on input line 50.
```

It is usually solved by `lmodern`, `anyfontsize` and `fix-cm` (which I used) packages.

2. Formatting. Ended up using the `latexindent` that comes with MacTeX distribution. It can be updated in TeX Live Utility.app, the default settings can be found in `indent.log`:

```
/usr/local/texlive/2025/texmf-dist/scripts/latexindent/defaultSettings.yaml
```

To modify, I created a file `~/indentconfig.yaml` as:

```
# Paths to user settings for latexindent.pl
paths:
- ~/projects/latex-shared/latexindent.yaml
```

The file `latexindent.yaml` is managed in my git repo. Other settings: <https://latexindentpl.readthedocs.io/en/latest/index.html>.

3. Project structure.

3.1. *Shared files.* Currently, I have my files used across different L^AT_EX saved in one github repo where I make symbolic link so that I could use shortcuts like probability $P(X)$ directly by including directly.

3.2. *Single file.* This is the default with one-file project, easy to track.

```
├── fig
│   └── plots.pdf
├── main.bib
├── main.tex
├── main.pdf
├── marco.tex % All my collected macros
└── custom-style.cls/def/sty/bst
```

3.3. *Multi-files.* Below is a larger L^AT_EX with different chapters:

```
├── chapters
│   └── 01-blabla.tex
├── fig
│   ├── R/Python.pdf
│   ├── TikZ.tex
│   ├── TikZ.pdf
│   ├── Asymptote.asy
│   └── Asymptote.pdf
├── main.bib
├── main.tex
├── main.pdf
├── marco.tex % All my collected macros
└── custom-style.cls/def/sty/bst
```

4. Mathematical notation. It has always been a hassle to organise mathematical notation across different sources, in fact, I would go so far as to argue that this is the most annoying thing when one starts reading a book or an article.

However, there *must be* some notational conflicts beyond primary school simply due to the fact that the limited number of alphabets (26). For example, “ \mathbb{E} ” might be energy in physics while it could refer to expectation or scores in probability.

Another difficulty is that the authors often assume some familiarity in the topics *also* I am expected to read in some logical or chronological order. In reality, I am constantly jumping back and forth between one literature to another.

$A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z$
 $\mathcal{A}, \mathcal{B}, \mathcal{C}, \mathcal{D}, \mathcal{E}, \mathcal{F}, \mathcal{G}, \mathcal{H}, \mathcal{I}, \mathcal{J}, \mathcal{K}, \mathcal{L}, \mathcal{M}, \mathcal{N}, \mathcal{O}, \mathcal{P}, \mathcal{Q}, \mathcal{R}, \mathcal{S}, \mathcal{T}, \mathcal{U}, \mathcal{V}, \mathcal{W}, \mathcal{X}, \mathcal{Y}, \mathcal{Z}$
 $\mathfrak{A}, \mathfrak{B}, \mathfrak{C}, \mathfrak{D}, \mathfrak{E}, \mathfrak{F}, \mathfrak{G}, \mathfrak{H}, \mathfrak{I}, \mathfrak{J}, \mathfrak{K}, \mathfrak{L}, \mathfrak{M}, \mathfrak{N}, \mathfrak{O}, \mathfrak{P}, \mathfrak{Q}, \mathfrak{R}, \mathfrak{S}, \mathfrak{T}, \mathfrak{U}, \mathfrak{V}, \mathfrak{W}, \mathfrak{X}, \mathfrak{Y}, \mathfrak{Z}$

$\arg \inf, \arg \sup, \arg \max, \arg \min, \text{conv}$

This stackexchange answer: <https://tex.stackexchange.com/a/58124> is probably the most comprehensive answer to which fonts are shown in \LaTeX .

Symbol	Usage	Comments
\mathbb{B}	<code>*f</code>	blackboard bold except <code>\If</code> due to conflict
\mathcal{B}	<code>*c</code>	calligraphic font
\mathfrak{B}	<code>*k</code>	Fraktur font

4.1. *Choose the notations and shortcuts wisely.* I am not even talking about the difference due to differences in fonts and italic or roman. It is just a very sad thing that we don’t even have a unified way of saying probability is just sad. Take probability for example and return to the most basic case of tossing a coin where the sample space is $\mathcal{A} = \{H, T\}$. I have come across:

$P()$ $\mathbb{P}()$ $\Pr()$ $\mathbb{P}()$ **Prob()**.