

My FAQ

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Emacs

How to install Emacs in Windows?

- Download Emacs (windows version) and extract the zip file to a directory.
- Create .emacs file in that directory.
- Create an environment variable with name = HOME and value = ~/path/to/that/directory
- Or, try EmacsW32.

How to use Emacs key bindings in all Windows applications?

Use XKeymacs.

How to enable spell check in Emacs?

- Download the flyspell.el and copy it into the directory of the Emacs load path.
- Declare the flyspell-mode function as auto-load by adding the following expression to .emacs file.

```
(autoload 'flyspell-mode "flyspell" "On-the-fly spelling checker." t)
(autoload 'flyspell-delay-command "flyspell" "Delay on command." t)
(autoload 'tex-mode-flyspell-verify "flyspell" "" t)
```

Add the following expression for spell check in *L^AT_EX* editing.

```
(add-hook 'LaTeX-mode-hook 'flyspell-mode)
```

- Download aspell installer and english dictionary and install them.
- Add ~/path/to/Aspell/bin to environment variable "PATH".

How to get doc-view mode to work on Windows Emacs?

- Firstly, a clip on YouTube for how doc-view mode works.
- Install Cygwin.
- Visit this website.
- The ghostscript program comes with CTeX bundle seems not to work. Instead, set doc-view-ghostscript-program to c:/cygwin/bin/gs.exe

How to input date and time to current buffer?

C-5 M-! date

How to speed up Emacs start-up?

- Add the following to .emacs. Now when you “exit” Emacs with the familiar key sequence, what actually happens is that the server buffers (from `emacsclientw`) are saved and deleted and then the frame (Emacs window) is made invisible. You can check the task manager to see that Emacs is indeed still running. (See here)

```
(require 'server)
(defun my-done ()
  (interactive)
  (server-edit)
  (make-frame-invisible nil t))
(global-set-key (kbd "C-x C-c") 'my-done)
```

- Invoke `emacsclientw` in a proper way. See here.
- Change Desktop to some frequently used directory.
- Setting up Emacs Daemon is not easy in Windows.

Where to find interesting Emacs tricks?

- EmacsWiki
- Planet Emacsen
- emacs-fu
- Emacser (in Chinese)
- Wang, Yin's blog (in Chinese)

L^AT_EX

How to install AUCTeX?

- Install MikTeX or CTeX bundle.
- Download the zip file and extract it to the load path of Emacs.
- Add the following to .emacs.

```
(autoload 'reftex-mode "reftex" "RefTeX Minor Mode" t)
(autoload 'turn-on-reftex "reftex" "RefTeX Minor Mode" nil)
(autoload 'reftex-citation "reftex-cite" "Make citation" nil)
(autoload 'reftex-index-phrase-mode "reftex-index" "Phrase mode" t)
(add-hook 'LaTeX-mode-hook 'turn-on-reftex)           ;; with AUCTeX LaTeX mode
(setq preview-scale-function 1.7)                    ;; enlarge equation preview
(setq preview-auto-cache-preamble t)                 ;; auto cache preamble
(setq preview-image-type (quote pnm))                ;; image type for preview (not sure of why)
```

- AUCTeX makes *L^AT_EX* editing in Emacs much simpler, see a clip on YouTube.

How to install cdlatex?

- Download cdlatex.el and put it to the load path of Emacs.
- Add the following to .emacs to autoload cdlatex for AUCTeX mode.

```
(autoload 'cdlatex-mode "cdlatex" "CDLaTeX Mode" t)
(autoload 'turn-on-cdlatex "cdlatex" "CDLaTeX Mode" nil)
(add-hook 'LaTeX-mode-hook 'turn-on-cdlatex) ;with AUCTeX LaTeX mode
```

- Add the following to .emacs to make math typing more comfortable.

```
(setq cdlatex-env-alist
'(("equation*" "\\begin{equation*}\n?\n\\end{equation*}" nil)
  ("frame" "\\begin{frame}\n\\frametitle{?}\n\\end{frame}\n" nil)
  ("alignsplit" "\\begin{align*}\n&\\hspace{3ex} ?\n\\end{align*}\n" nil)
  ("ex" "\\begin{ex}\n?\n\\end{ex}" nil)
)
) ;; define several frequently-used environments

(setq cdlatex-command-alist
'(("eq" "Insert equation* env" "" cdlatex-environment ("equation*") t nil)
  ("fm" "Insert frame env" "" cdlatex-environment ("frame") t nil)
  ("al" "Insert alignsplit env" "" cdlatex-environment ("alignsplit") t nil)
  ("ex" "Insert example env" "" cdlatex-environment ("ex") t nil)
)
) ;; define alias of environment, type alias [TAB] to get the structure of environment

(setq cdlatex-math-symbol-alist
'((?\\; ("\\ldots"))
  (?h ("\\hat{?}")
  (?T ("\\tilde{?}")
  (?j ("\\{? \\}")
  (?x ("\\text{?\\}")
  (?p ("o_P\\left(?\\right)")
  (?P ("O_P\\left(?\\right)")
)
) ;; define several frequently math symbols, type 'symbol to input symbol
```

- cdlatex simplifies math typing in *L^AT_EX* editing. e.g., type ‘h’s to get $\hat{\sigma}$, type ‘P to get $O_P()$. Type ‘h‘m[TAB]-‘m=‘Pfr1[TAB]sq[TAB]n. (a total of 21 keystrokes) to get

$$\hat{\mu} - \mu = O_P\left(\frac{1}{\sqrt{n}}\right).$$

Without using cdlatex, the above expression needs 50 keystrokes: `\hat{\mu}-\mu=O_P\left(\frac{1}{\sqrt{n}}`

How to install \LaTeX packages in Linux?

- Download the package from CRAN.
- Extract the .zip file to get .dtx and .ins
- `latex *.ins` to get .sty
- Create a folder in `/usr/share/texmf-texlive/tex/latex` and move .sty to the new folder by using root permission (M-F2 **gksu nautilus**).
- Refresh the package tree by `sudo texhash`.

R

How to clear the history of a R session?

```
rm(list=ls(all=TRUE))
```

How to debug a R code using ESS-mode in Emacs?

- Download `ess-tracebug.el` and put it into emacs load-path.
- Put the following in `.emacs`.

```
(require 'ess-tracebug)
(add-hook 'ess-post-run-hook 'ess-tracebug t)
```

- Use the following keybindings.

M-c b	set break point
M-c w	watch window
print(n)	show the value of “n”
n	next line
c	continue
q	exit debugging

- For more information, see `ess-tracebug google code`.

How to run matlab and R codes in my department's server?

```
nohup /unsup/R/bin/R CMD BATCH script.R output_name.out&
nohup matlab -nodisplay <script.m> output_name.out&
```

org-mode

How to evaluate R code chunk in org-mode?

- Add the following to `.emacs`, by default org-mode only enables emacs-lisp code evaluation.

```
(org-babel-do-load-languages
 'org-babel-load-languages
 '((R . t)
  (emacs-lisp . t)))
```

- Add `/path/to/R.exe` to system environment variable “path”, so that org-mode knows where to find R.
- `C-c C-c` to evaluate R code chunk and insert result to .org file. `C-'` to edit the current code chunk in a R major-mode edit buffer.

How to use Org-babel to weave R code and \LaTeX code?

- See an org-mode demo.
- The following header arguments are useful.

argument	value	function
<code>:exports</code>	<code>code/results/both/none</code>	control which part to export
<code>:results</code>	<code>vector/latex/code</code>	specify how they will incorporated into the Org-buffer
<code>:file</code>	<code>filename</code>	results are saved to the named file
<code>:cache</code>	<code>yes/no</code>	“yes” ensures the code chunk are only re-run when inputs changed

- Refer to org-mode manual for more header arguments.