Quick tutorials for Git, $\boldsymbol{LaTeX}$ and Zotero

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https://waynehfut.com

2020/11/23

Git

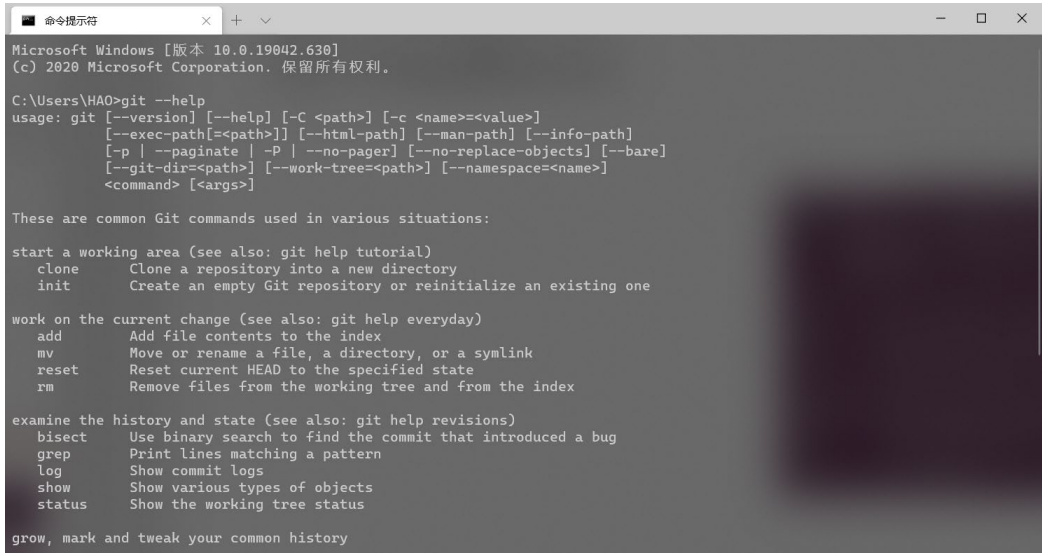
- Git installation
- Git configuration
- Git repository
- Git commit, pull and push
- .gitignore
- Rollback
- Branch
- Private repository

Git installation

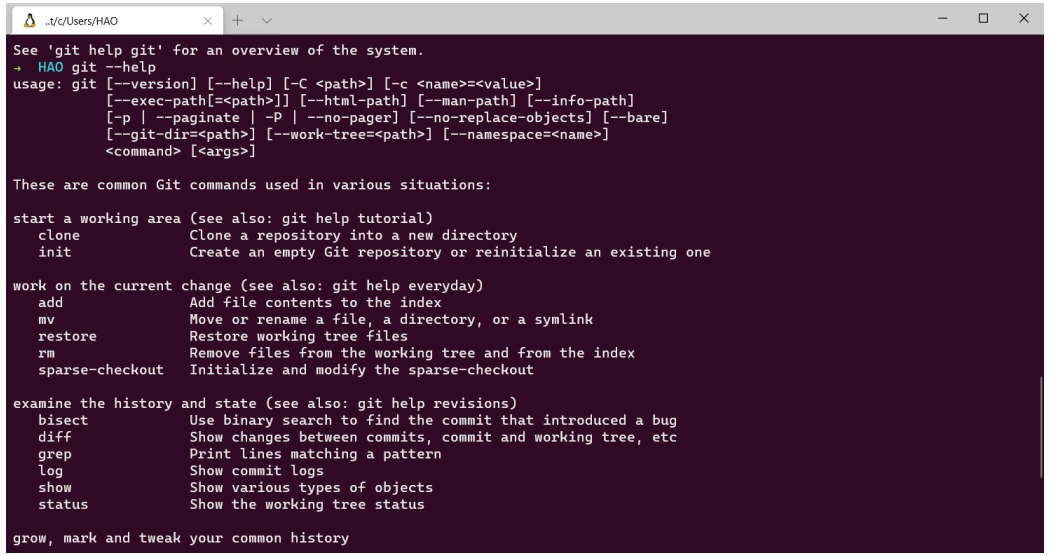
- Windows:
  - Git-SCM: https://git-scm.com/
  - Github Desktop: https://desktop.github.com/
- Linux and MacOS:
  - via apt: sudo apt install git

  (Defaulted install in the Unix and Linux)

Git installation



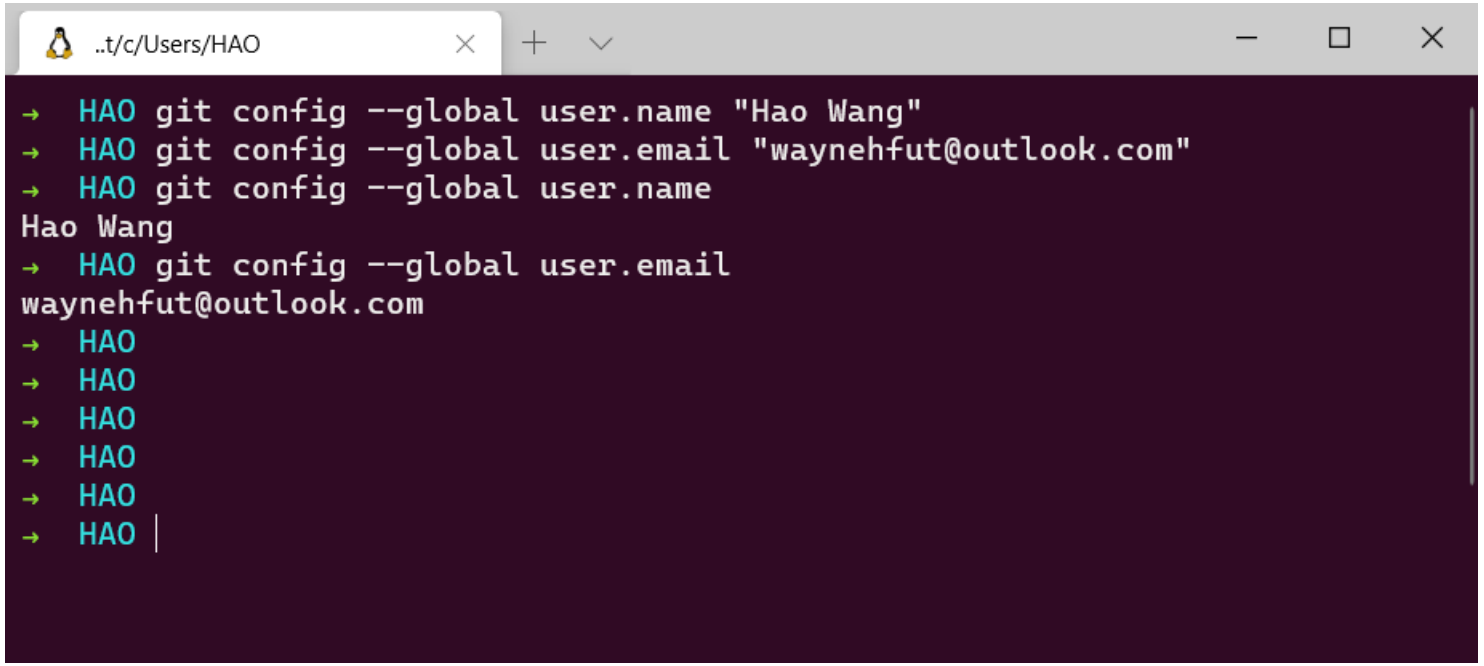
Windows (cmd)



Ubuntu (bash)

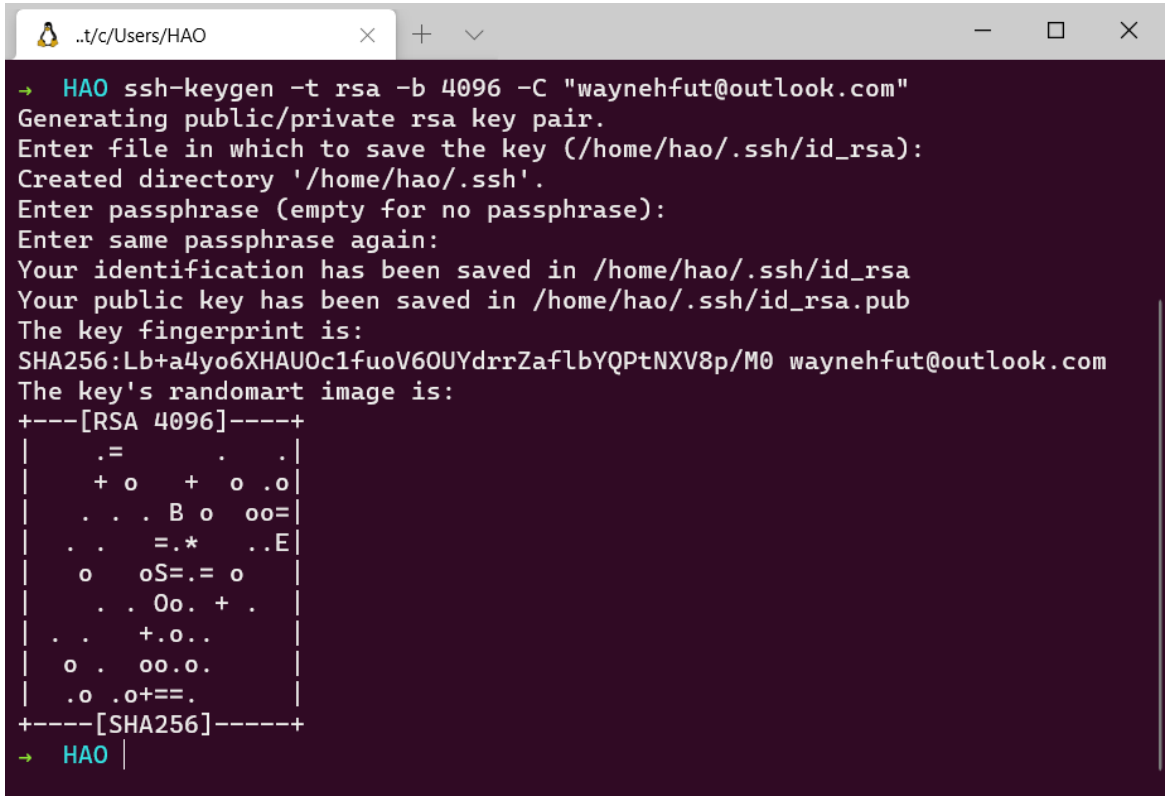
Git configure personal infomation

- git config --global user.name "Hao Wang"
- git config --global user.email "waynehfut@outlook.com"



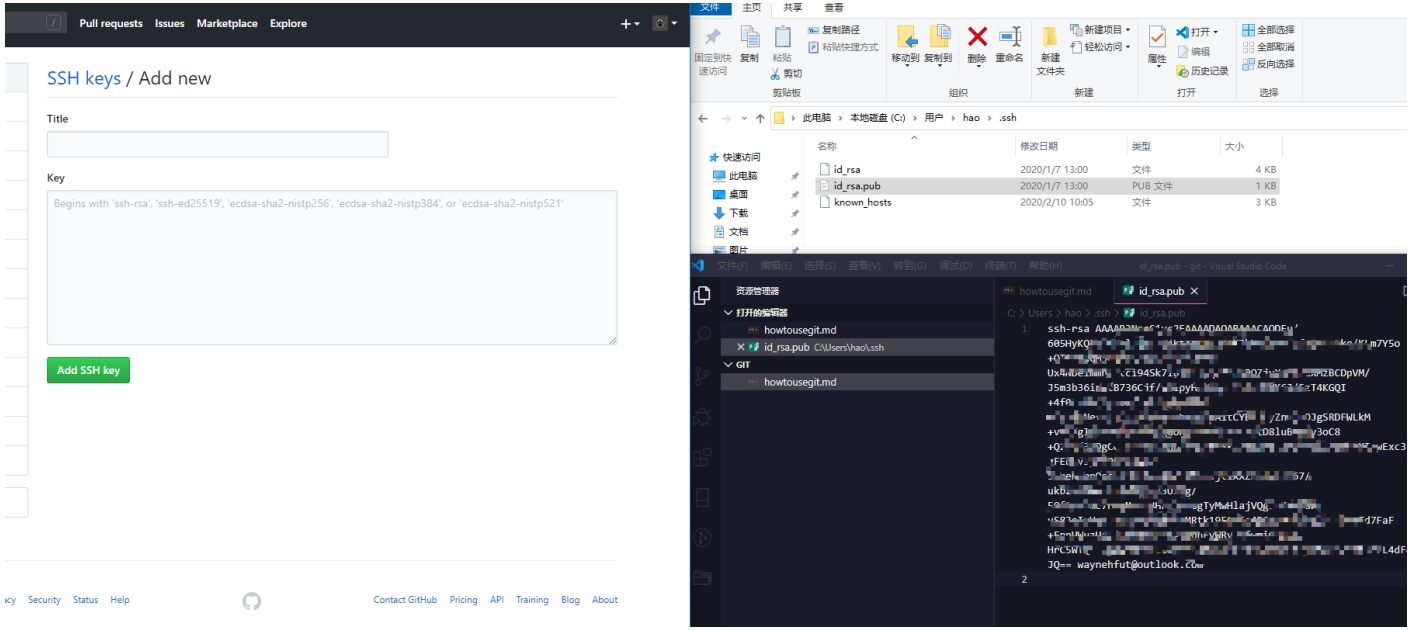
Git configuration ssh

- ssh-keygen -t rsa -b 4096 -C "waynehfut@outlook.com"



Git configuration ssh

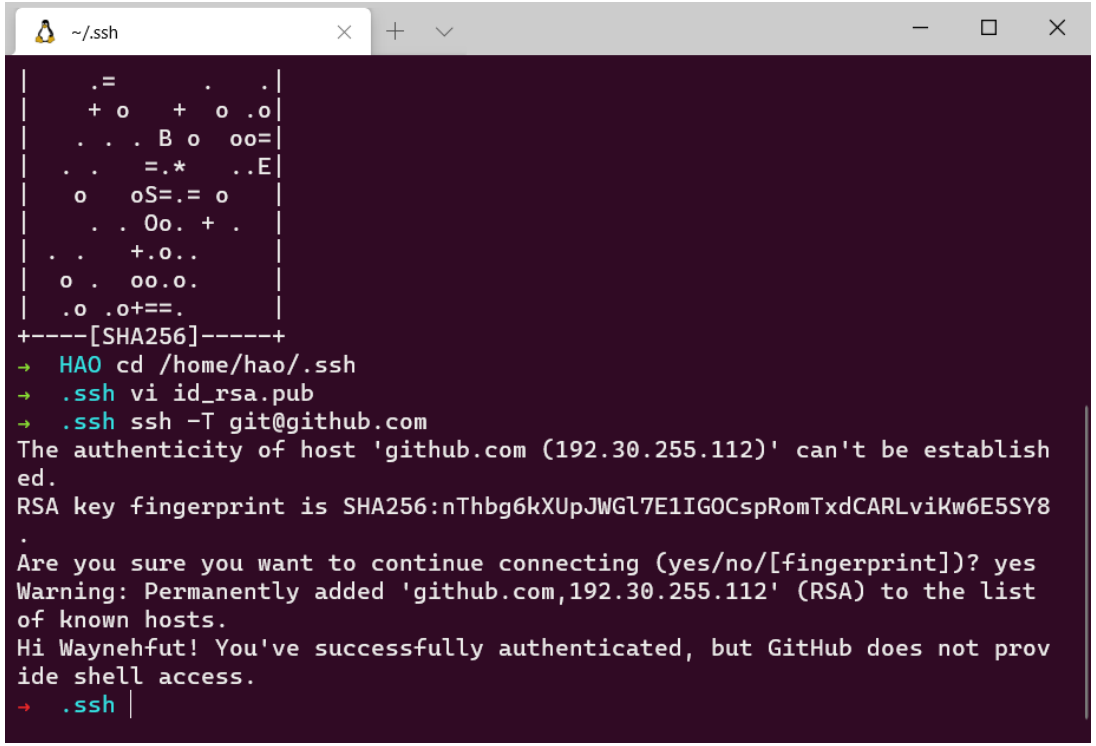
- Add id_rsa.pub to the remote platform (such as github)
- Open https://github.com/settings/keys
- Click add new key and paste the content from id_rsa.pub



Git configuration ssh

- Test ssh connection
- ssh -T git@github.com

Are you sure you want to continue connecting (yes/no/[fingerprint])? yes

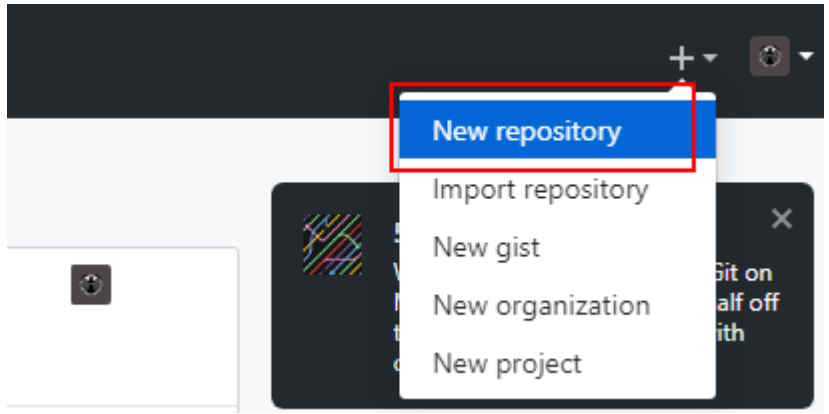


Git repository

Two way to create a repo

- Via web
- Via local init

Create repo via web



Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere?
Import a repository.

Owner / Repository name *

Waynehfut / test

Great repository names are short and memorable. Need inspiration? How about **super-chainsaw**?

Description (optional)

Public
Anyone can see this repository. You choose who can commit.

Private
You choose who can see and commit to this repository.

Skip this step if you're importing an existing repository.

Initialize this repository with a README
This will let you immediately clone the repository to your computer.

Add .gitignore: None | Add a license: None

Grant your Marketplace apps access to this repository

You are subscribed to 1 Marketplace app

Travis CI
Test and deploy with confidence

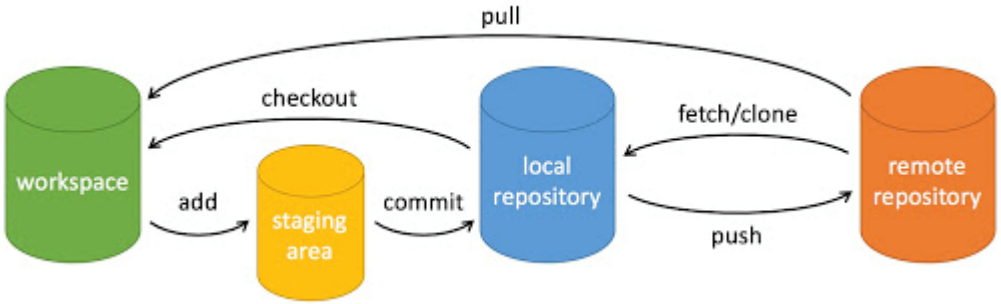
Create repository

Create repo via local init

- git init `# Setup current work folder as repo`
- git add -A `# Add all file as git track files`
- git commit -m "first commit" `# commit current status to the git local head and with message \`first commit\``
- git remote add origin git@github.com:Waynehfut/test.git `# add remote repo`
- git push -u origin master `# push local head to the remote repo`

Git commit, pull and push

- git commit -m "first commit" *# commit current status to the git local head and with message `first commit`*
- git pull <remote-branch> *# pull most recent update to local worktree*
- git push <remote-branch> <local-branch> *# push most recent committed change to the remote repo*



https://www.runoob.com/git/git-basic-operations.html

.gitignore

Some files you don’t want to track, you can:

- Identify the list manually
- Generate by the template

.gitignore

- Manual:

  Regular expression

- Template:

  https://github.com/github/gitignore

  https://github.com/JetBrains/idea-gitignore

  https://github.com/toptal/gitignore


.gitignore

D: > Code > web > meet > .gitignore

```
.vscode/*
!.vscode/settings.json
!.vscode/tasks.json
!.vscode/launch.json
!.vscode/extensions.json
*.code-workspace

# Local History for Visual Studio Code
.history/

# Covers JetBrains IDEs: IntelliJ, RubyMine, PhpStorm, AppCode, PyCharm, CLion, Android Studi
# Reference: https://intellij-support.jetbrains.com/hc/en-us/articles/206544839

# User-specific stuff
.idea/**/workspace.xml
.idea/**/tasks.xml
.idea/**/usage.statistics.xml
.idea/**/dictionaries
.idea/**/shelf

# Generated files
.idea/**/contentModel.xml

# Sensitive or high-churn files
.idea/**/dataSources/
.idea/**/dataSources.ids
.idea/**/dataSources.local.xml
.idea/**/sqlDataSources.xml
.idea/**/dynamic.xml
.idea/**/uiDesigner.xml
.idea/**/dbnavigator.xml

# Gradle
.idea/**/gradle.xml
.idea/**/libraries

# Gradle and Maven with auto-import
# When using Gradle or Maven with auto-import, you should exclude module files,
# since they will be recreated, and may cause churn.  Uncomment if using
# auto-import.
# .idea/artifacts
# .idea/compiler.xml
# .idea/jarRepositories.xml
# .idea/modules.xml
# .idea/*.iml
# .idea/modules
# *.iml
# *.ipr
```

Rollback

Not push yet

- git reset HEAD <fileName>

```
# cancel the commit for <fileName>
```

- git checkout <fileName>

```
# rollback <filename> to previous status
```

Pushed

- git log
- Git revert <commitID>

```
commit 59eba18799de0d2e622fcd58c7ed2de48b34d587 (HEAD -> master, origin/master)
Author: Hao Wang <hwang1@pitt.edu>
Date:   Tue Oct 29 14:52:18 2019 -0400

    update

commit 198471915f1dcc6bd8ce2a6684d32b0555811456
Author: Hao Wang <waynehfut@gmail.com>
Date:   Thu Oct 24 18:29:01 2019 -0400

    new

commit 6dc78c8b9f5163b1322fb5670112c0e2c9fcba1d
Author: Hao Wang <waynehfut@gmail.com>
Date:   Thu Oct 24 18:25:53 2019 -0400

    add comments

commit 4baa34130e7305bb0872125fe27ea93abf858075
Author: unknown <hao@CS-RIVER-3.univ.pitt.edu>
Date:   Wed Oct 23 19:13:17 2019 -0400

:...skipping...
commit 59eba18799de0d2e622fcd58c7ed2de48b34d587 (HEAD -> master, origin/master)
Author: Hao Wang <hwang1@pitt.edu>
Date:   Tue Oct 29 14:52:18 2019 -0400

    update

commit 198471915f1dcc6bd8ce2a6684d32b0555811456
Author: Hao Wang <waynehfut@gmail.com>
Date:   Thu Oct 24 18:29:01 2019 -0400
```

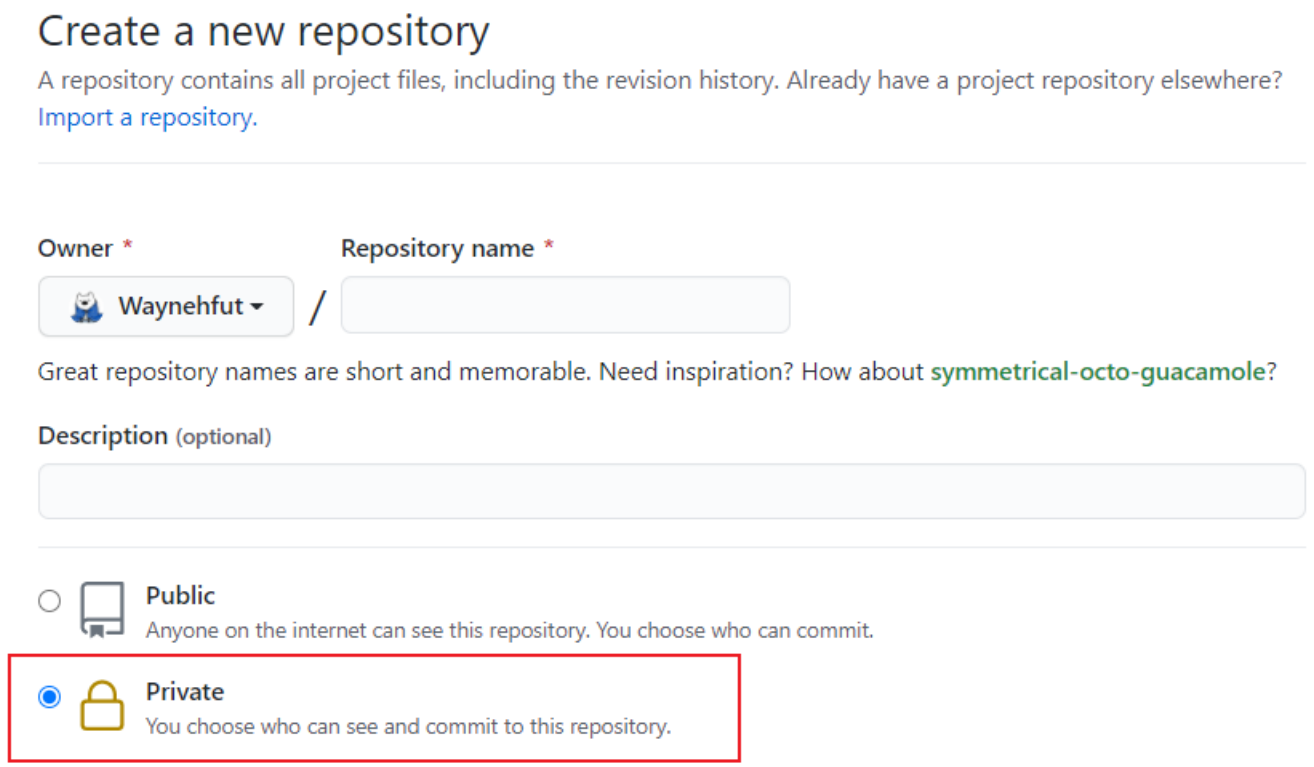
Branch

- git branch `# check current branch status`
- git branch (branchname) `# create new branch`
- git checkout (branchname) `# switch to new branch`
- git checkout -b (branchname) `# create and switch to new branch`
- git branch -d (branchname) `# delete new branch`
- git merge (branchname) `# merge (branchname) to current branch`

https://www.runoob.com/git/git-branch.html

Private repository

- Both github and gitlab support the private repository for free.



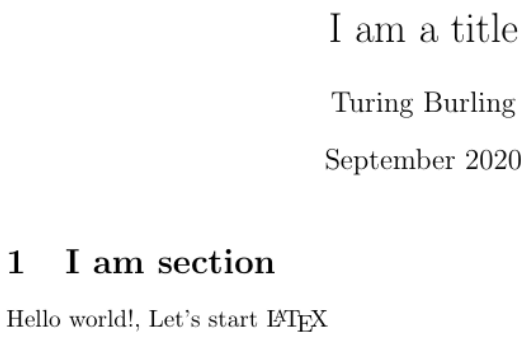
$LaTeX$

- What is $LaTeX$
- Environment
- $LaTeX$ syntax
- Related resource

What is $LaTeX$

- /ˈlɑːtɛk/ or /ˈleɪtɛk/

```
\documentclass{article}
\title{I am a title}
\author{Turing Burling}
\date{September 2020}
\begin{document}
\maketitle
\section{I am section}
Hello world!, Let's start \LaTeX
\end{document}
```



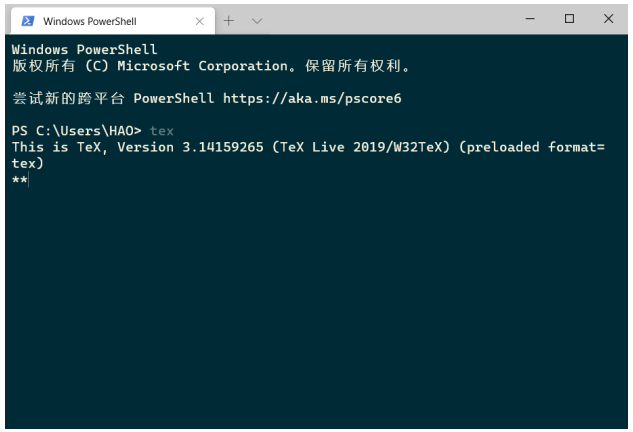
Environment

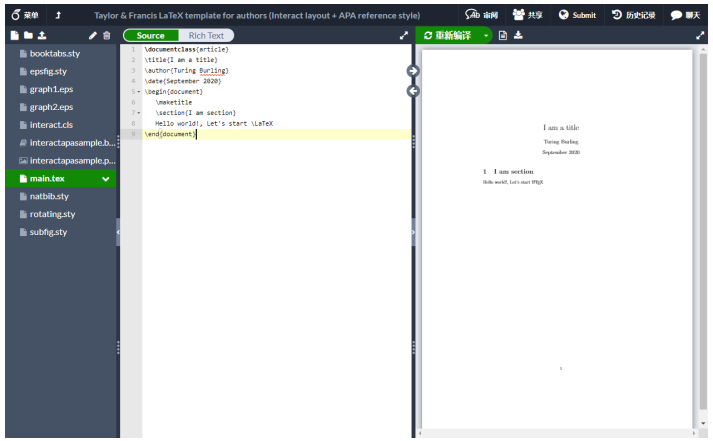
Local environment is not recommended,

consider using https://www.overleaf.com/

If you want install Latex on your computer

- Windows and linux, TexLive: https://www.tug.org/texlive/
- MacOS, MacTex: https://www.tug.org/mactex/



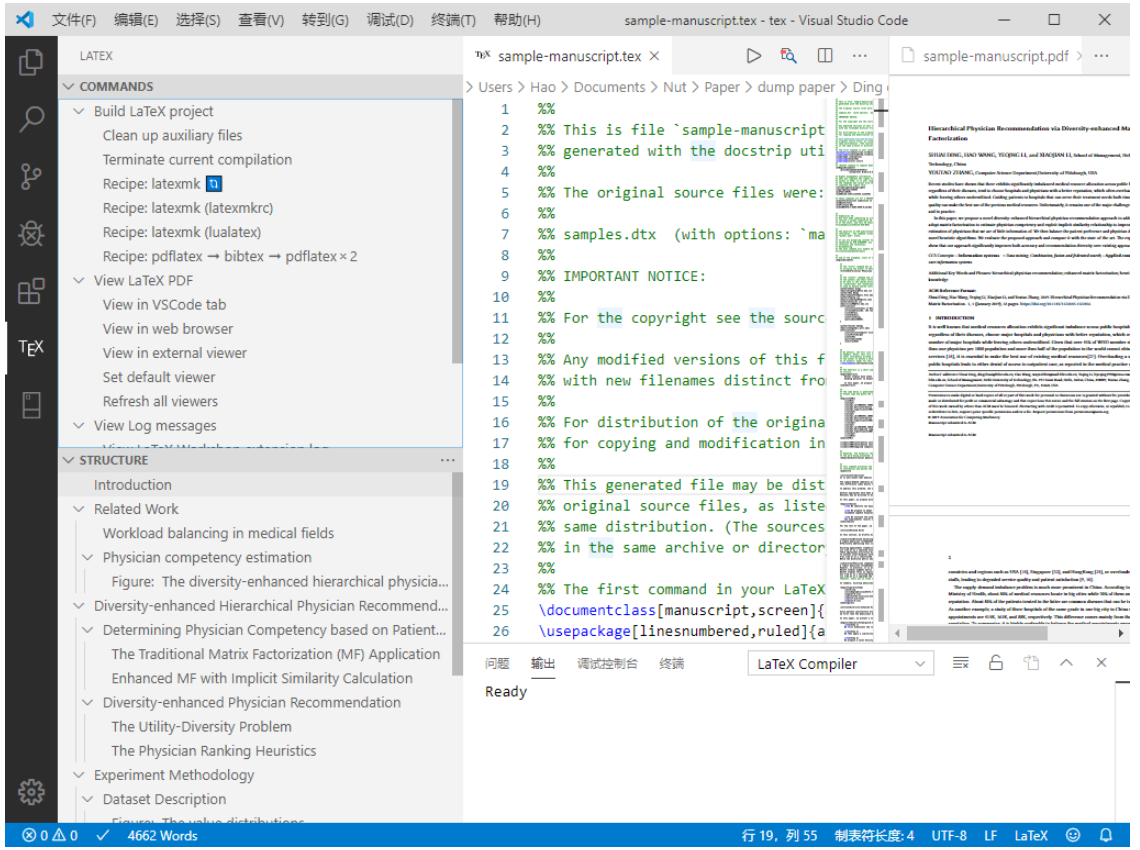


Environment

Using offline

- TexStudio
- VSCode Latex Workshop

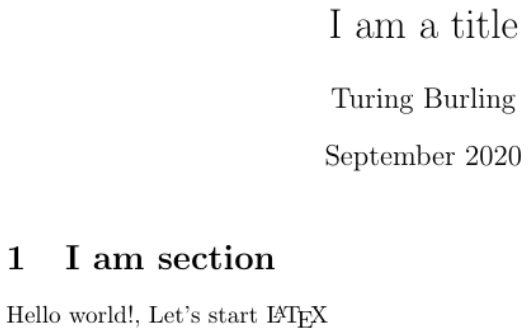
```
mirrors.tuna.tsinghua.edu.cn
mirrors.ustc.edu.cn
```



$LaTeX$ syntax

- A simplest $LaTeX$:

```
\documentclass{article} %Document type
\title{Title} %Document title
\begin{document} %Main body
\maketitle %Make title
Hello world!, Let's start \LaTeX %Simple paragraph
\end{document} %End document
```



$LaTeX$ syntax

Affiliation and footnote:

- \usepackage{authblk}

```
\renewcommand\Affilfont{\itshape\small}
\author[1]{Hao~Wang, Sherleen~Zhu \thanks{Happy everyday}}%
\author[2]{Turling Burling}
\affil[1]{Hefei University of Technology}
\affil[2]{University of Pittsburgh}
\maketitle
```

Title

Hao Wang, Sherleen Zhu *[1] and Turling Burling[2]

[1] *Hefei University of Technology*
[2] *University of Pittsburgh*

I will ref the table here 1
Here is a figure 1

*Happy everyday

$LaTeX$ syntax

Abstract:

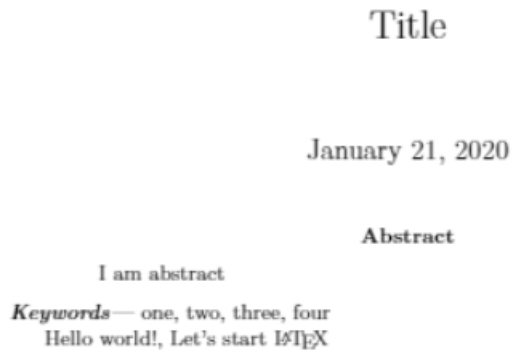
```
\begin{abstract}
I am abstract
\end{abstract}
```

$LaTeX$ syntax

Key words:

Most journal template provide the keywords syntax, here we identify a simplest format.

```
\providecommand{\keywords}[1] %
{
\small
\textbf{\textit{Keywords---}} #1
}
\keywords{one, two, three, four}
```



$LaTeX$ syntax

Section:

```
\section{Introduction}
\subsection{Overview of the proposed method}
```

Title

January 21, 2020

Abstract

I am abstract

Keywords— one, two, three, four

1 Introduction

Hello world!, Let's start LaTeX

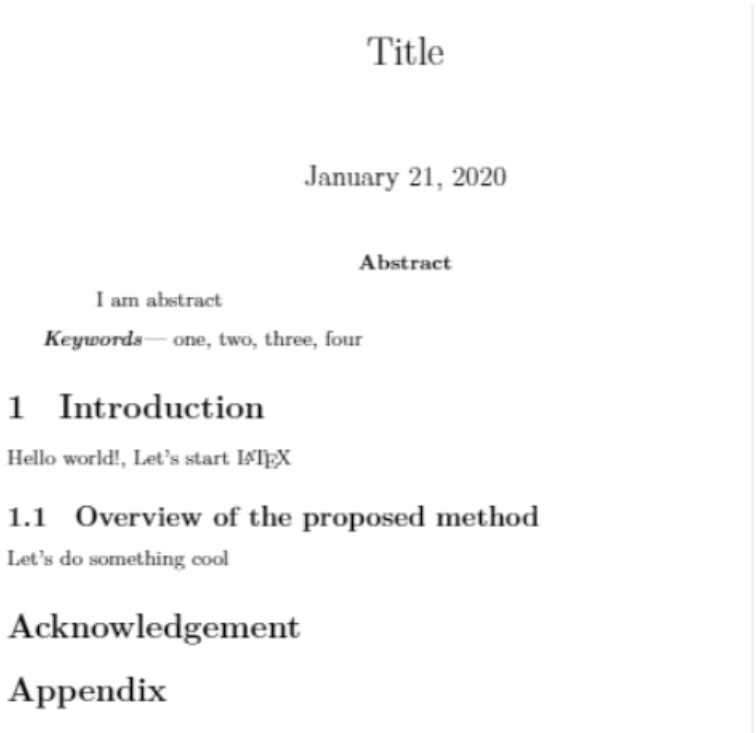
1.1 Overview of the proposed method

Let's do something cool

$LaTeX$ syntax

Appendix:

```
\section*{Acknowledgement}
\section*{Appendix}
```



Title

January 21, 2020

Abstract

I am abstract

Keywords— one, two, three, four

1 Introduction

Hello world!, Let's start LaTeX

1.1 Overview of the proposed method

Let's do something cool

Acknowledgement

Appendix

$LaTeX$ syntax

List:

```
\begin{itemize}
\item item 1
\item item 2
\end{itemize}
```

- item 1
- item 2

```
\begin{enumerate}
\item item 1
\item item 2
\end{enumerate}
```

1. item 1
2. item 2

$LaTeX$ syntax

Table:

```
\begin{table}[]
\begin{tabular}{ c c c }
cell1 & cell2 & cell3 \\
cell4 & cell5 & cell6 \\
cell7 & cell8 & cell9
\end{tabular}
\end{table}
```

cell1	cell2	cell3
cell4	cell5	cell6
cell7	cell8	cell9

```
\begin{table}[]
\begin{tabular}{ c c c }
\hline
cell1 & cell2 & cell3 \\
\hline
cell4 & cell5 & cell6 \\
cell7 & cell8 & cell9 \\
\hline
\end{tabular}
\end{table}
```

cell1	cell2	cell3
cell4	cell5	cell6
cell7	cell8	cell9

$LaTeX$ syntax

Table:

```
\begin{table}[]
\begin{tabular}{|c|c|c|} % aligned
\hline %line
\multicolumn{2}{|c|}{cell1} & cell3 \\ \hline %merge line
cell4 & cell5 & \multirow{2}{*}{cell6} \\ \cline{1-2} %merge column
cell7 & cell8 & \\ \hline
\end{tabular}
\end{table}
```

cell1		cell3
cell4	cell5	cell6
cell7	cell8	

```
\begin{table}[]
\caption{I am sample table}
\label{tab1sample}
\centering
\begin{tabular}{|c|c|c|}
\hline
\multicolumn{2}{|c|}{cell1} & cell3 \\ \hline
cell4 & cell5 & \multirow{2}{*}{cell6} \\ \cline{1-2}
cell7 & cell8 & \\ \hline
\end{tabular}
\end{table}
```

Table 1: I am sample table

cell1		cell3
cell4	cell5	cell6
cell7	cell8	

```
I will ref the table here~\ref{tab1sample}
```

I will ref the table here 1

$LaTeX$ syntax

Table location control

- h: where the table is declared (here)
- t: at the top of the page
- b: at the bottom of the page
- p: on a dedicated page of floats
- !: override the default float restrictions.

https://en.wikibooks.org/wiki/LaTeX/Tables

$LaTeX$ syntax

- Image

```
\begin{figure}[!t]
\centering
\includegraphics[width=1.13in]{pic/1-1}
\caption{I am sample figure.}
\label{fig1sample}
\end{figure}
```

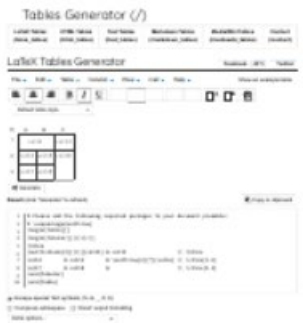


Figure 1: I am sample figure.

$LaTeX$ syntax

- Multi Image

```
\begin{figure}[!t]
\centering
\includegraphics[width=1.13in]{pic/1-1}
\includegraphics[width=1.13in]{pic/1-1}
\includegraphics[width=1.13in]{pic/1-1}
\caption{I am sample figure.}
\label{fig1sample}
\end{figure}
```

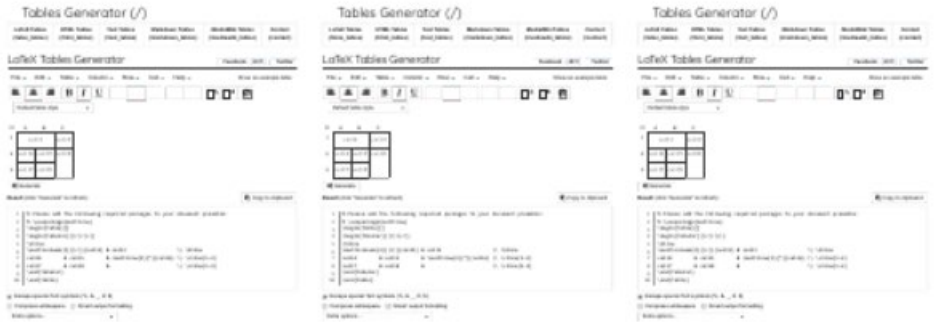


Figure 1: I am sample figure.

$LaTeX$ syntax

- Multi Image with subtitle

```
\begin{figure}[!t]
\centering
\subfloat[]{
\includegraphics[width=1.6in]{pic/1-1}
}
\subfloat[]{
\includegraphics[width=1.6in]{pic/1-1}
}
\quad
\subfloat[]{
\includegraphics[width=1.6in]{pic/1-1}
}
\subfloat[]{
\includegraphics[width=1.6in]{pic/1-1}
}
\caption{combine 4 picture}
\label{fig2combine}
\end{figure}
```

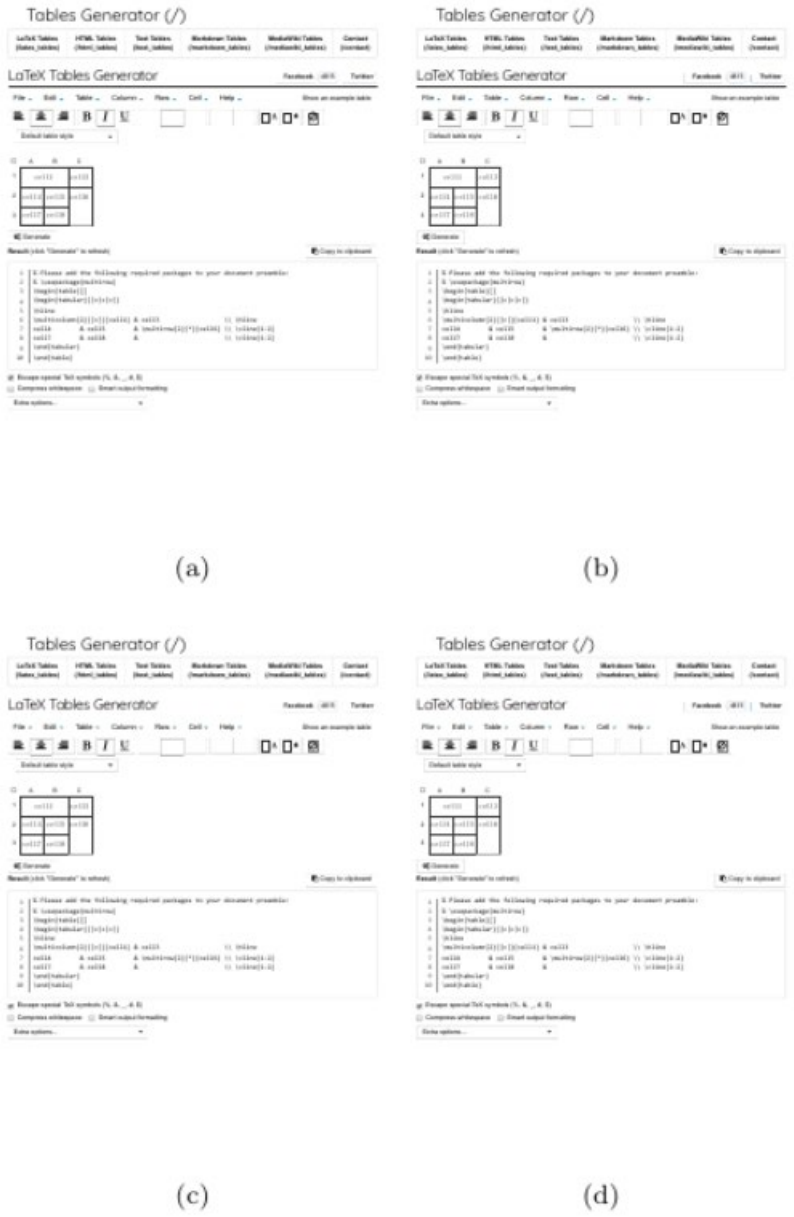
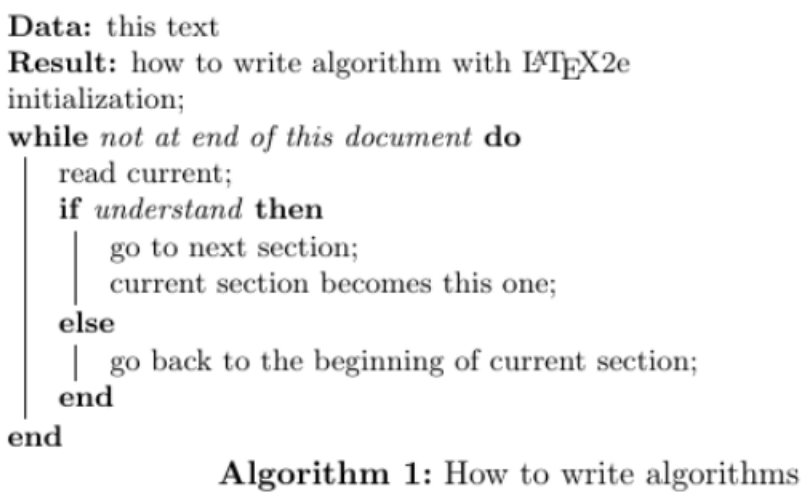


Figure 2: combine 4 picture

$LaTeX$ syntax

- algorithm

```
\begin{algorithm}[H]
\SetAlgoLined
\KwData{this text}
\KwResult{how to write algorithm with \LaTeX2e
}
initialization\;
\While{not at end of this document}{
read current\;
\eIf{understand}
{go to next section\;
current section becomes this one\;}
{go back to the beginning of current section\;}
}
\label{Algorithmsample}
\caption{How to write algorithms}
\end{algorithm}
```



Algorithm 1: How to write algorithms

$LaTeX$ syntax

- algorithm

```
\begin{algorithm}
\caption{How to write algorithms}
\label{algo2}
\begin{algorithmic}[H]
\REQUIRE this text
\ENSURE how to write algorithm with \LaTeX
\WHILE{not at end of this document}
\STATE read current
\IF {understand}
\STATE go to next section
\STATE current section becomes this one
\ELSE
\STATE go back to the beginning of current section
\ENDIF
\ENDWHILE
\label{Algorithmsample}
\end{algorithmic}
\end{algorithm}
```

Algorithm 1 How to write algorithms

Require: this text
Ensure: how to write algorithm with LaTeX
while not at end of this document **do**
read current
if understand **then**
go to next section
current section becomes this one
else
go back to the beginning of current section
end if
end while

$LaTeX$ syntax

- Equation
  - Inline : $a=b+c$
  - Equation block:

```
\begin{equation}
\label{eq1}
a^2=b^2+c^2
\end{equation}
```

  - Non list equation: \[a^2=b^2+c^2\]

$$a = b + c,$$

$$a^2 = b^2 + c^2 \tag{1}$$

$$a^2 = b^2 + c^2$$

- Online

  https://www.latex4technics.com/

  https://www.codecogs.com/latex/eqneditor.php/

$LaTeX$ syntax

Reference

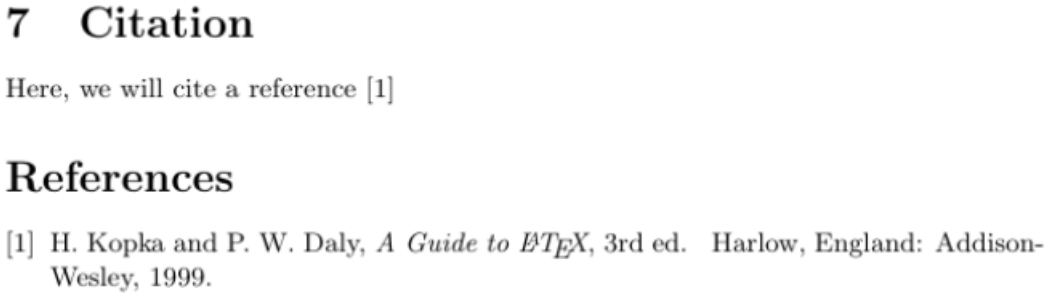
- Using bbl

```
\begin{thebibliography}{1}
\bibitem{citekey}
H.~Kopka and P.~W. Daly, \emph{A Guide to \LaTeX}, 3rd~ed.\hskip 1em plus
0.5em minus 0.4em\relax Harlow, England: Addison-Wesley, 1999.
\end{thebibliography}

Here, we will cite a reference~\cite{citekey}
```

- Using bib

  Create by Zotero, Mendeley, etc.



7 Citation

Here, we will cite a reference [1]

References

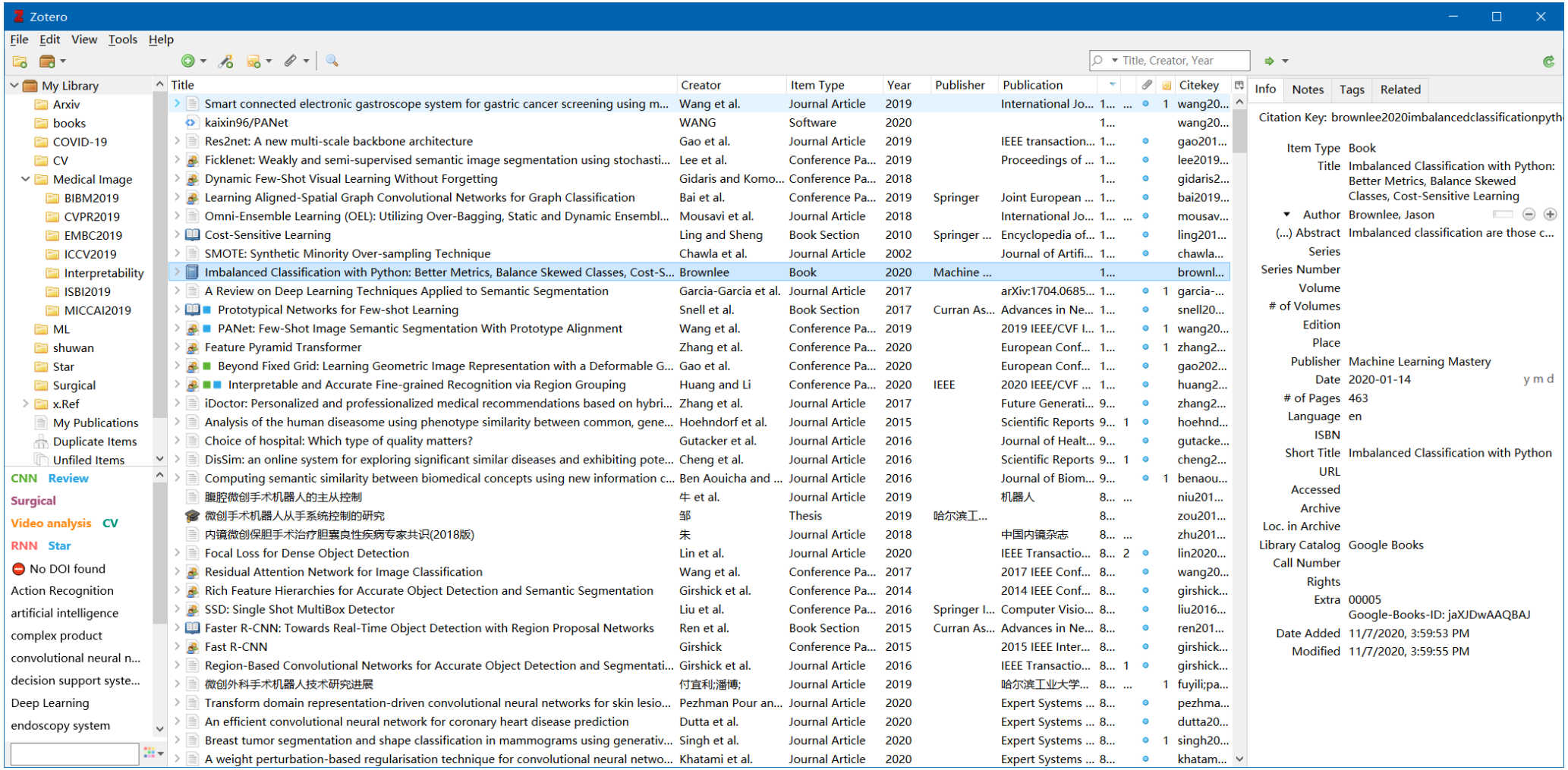
[1] H. Kopka and P. W. Daly, *A Guide to LaTeX*, 3rd ed. Harlow, England: Addison-Wesley, 1999.

Zotero

- Setup
- Import library
- Add new item
- Plugins
- Cite in Latex
- Cite in Word

https://zbib.org/

Zotero


Zotero
File Edit View Tools Help
Title, Creator, Year
My Library
Arxiv
books
COVID-19
CV
Medical Image
BIBM2019
CVPR2019
EMBC2019
ICCV2019
Interpretability
ISBI2019
MICCAI2019
ML
shuwan
Star
Surgical
x.Ref
My Publications
Duplicate Items
Unfiled Items
CNN Review
Surgical
Video analysis CV
RNN Star
No DOI found
Action Recognition
artificial intelligence
complex product
convolutional neural n...
decision support syste...
Deep Learning
endoscopy system
Title
Creator
Item Type
Year
Publisher
Publication
Citekey
Smart connected electronic gastroscope system for gastric cancer screening using m... Wang et al. Journal Article 2019 International Jo... wang20...
kaixin96/PANet WANG Software 2020 wang20...
Res2net: A new multi-scale backbone architecture Gao et al. Journal Article 2019 IEEE transaction... gao201...
Ficklenet: Weakly and semi-supervised semantic image segmentation using stochasti... Lee et al. Conference Pa... 2019 Proceedings of ... lee2019...
Dynamic Few-Shot Visual Learning Without Forgetting Gidaris and Komo... Conference Pa... 2018 gidaris2...
Learning Aligned-Spatial Graph Convolutional Networks for Graph Classification Bai et al. Conference Pa... 2019 Springer Joint European ... bai2019...
Omni-Ensemble Learning (OEL): Utilizing Over-Bagging, Static and Dynamic Ensembl... Mousavi et al. Journal Article 2018 International Jo... mousav...
Cost-Sensitive Learning Ling and Sheng Book Section 2010 Springer ... Encyclopedia of... ling201...
SMOTE: Synthetic Minority Over-sampling Technique Chawla et al. Journal Article 2002 Journal of Artifi... chawla...
Imbalanced Classification with Python: Better Metrics, Balance Skewed Classes, Cost-S... Brownlee Book 2020 Machine ... brownl...
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https://www.zotero.org/support/zh/start

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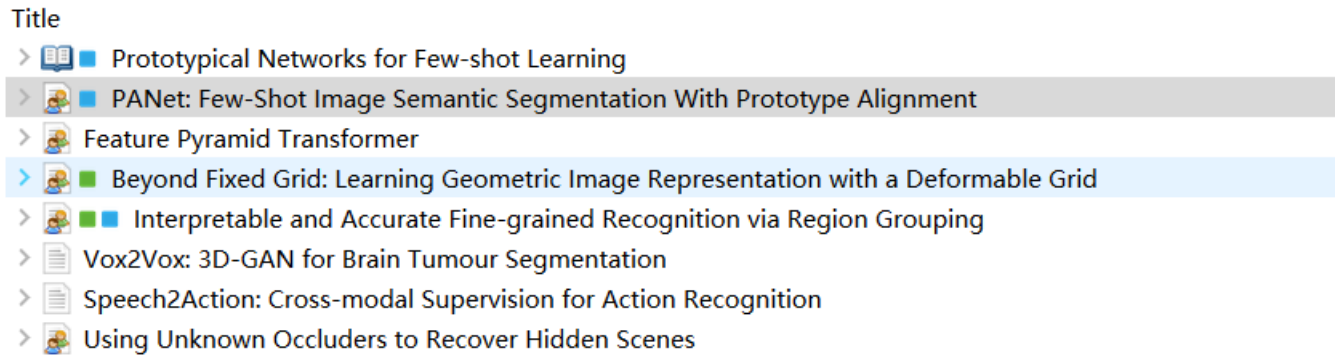

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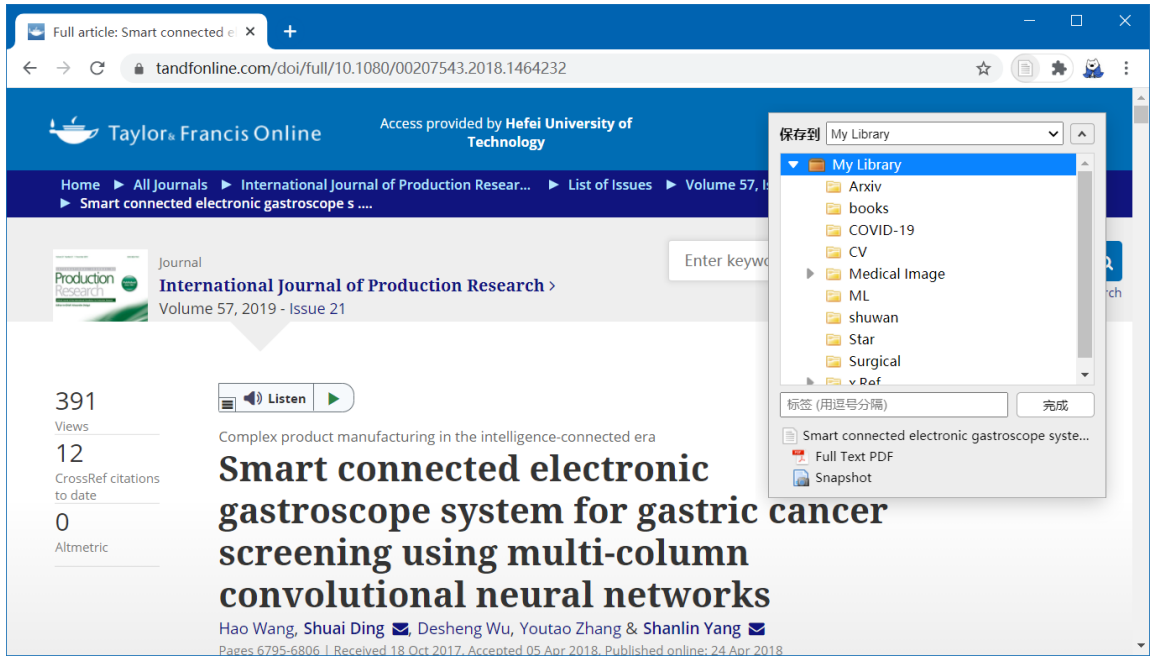

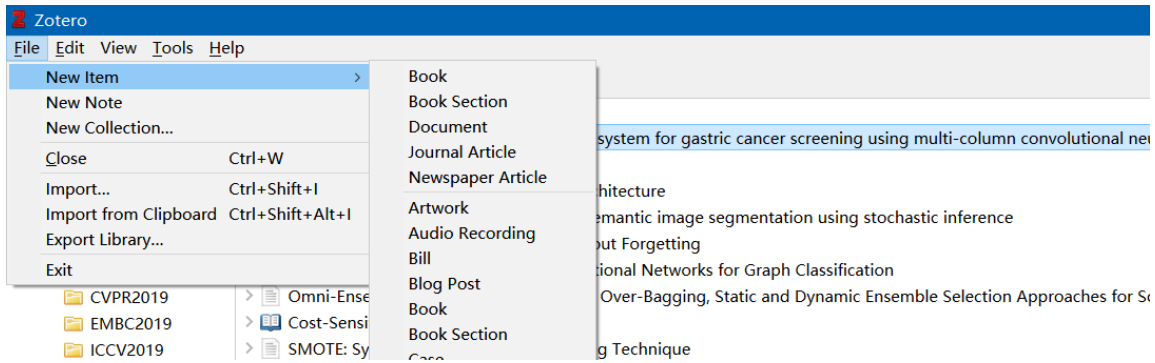

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Plugins

- Better BibTex for Zotero

  Make Zotero useful for us LaTeX holdouts.

- Zotero DOI Manager

  Zotero plugin for auto-fetching and validating DOI and shortDOI names

- Zotero Scholar Citations

  Zotero plugin for auto-fetching numbers of citations from Google Scholar

- ZotFile

  Advanced PDF management for Zotero

Cite in Latex

- Export the collection


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  booktitle = {2018 {{IEEE}}/{{CVF Conference}} on {{Computer Vision}} and {{Pattern Recognition}}},
  author = {Balakrishnan, Guha and Zhao, Amy and Sabuncu, Mert R. and Dalca, Adrian V. and Guttag, John},
  date = {2018-06},
  pages = {9252--9260},
  publisher = {{IEEE}},
  location = {{Salt Lake City, UT}},
  doi = {10/ggchmh},
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- Cite item with citekey

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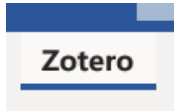
```

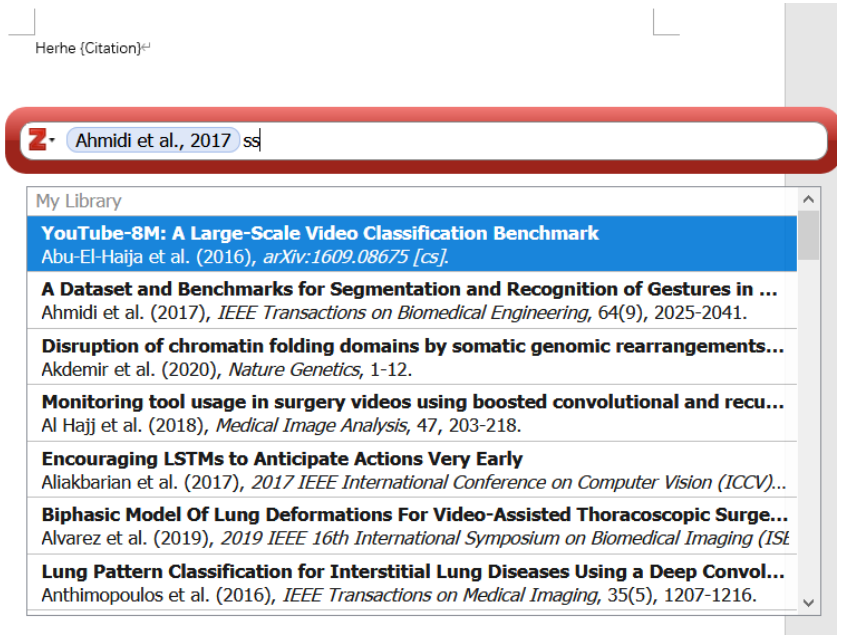
Cite in Word

- Check word plugin



- Add or edit citation

- Add or edit bibliography



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[2] H. Al Hajj, M. Lamard, P.-H. Conze, B. Cochener, and G. Quellec, 'Monitoring tool usage in surgery videos using boosted convolutional and recurrent neural networks', *Med. Image Anal.*, vol. 47, pp. 203–218, Jul. 2018, doi: 10/gdvrxd.

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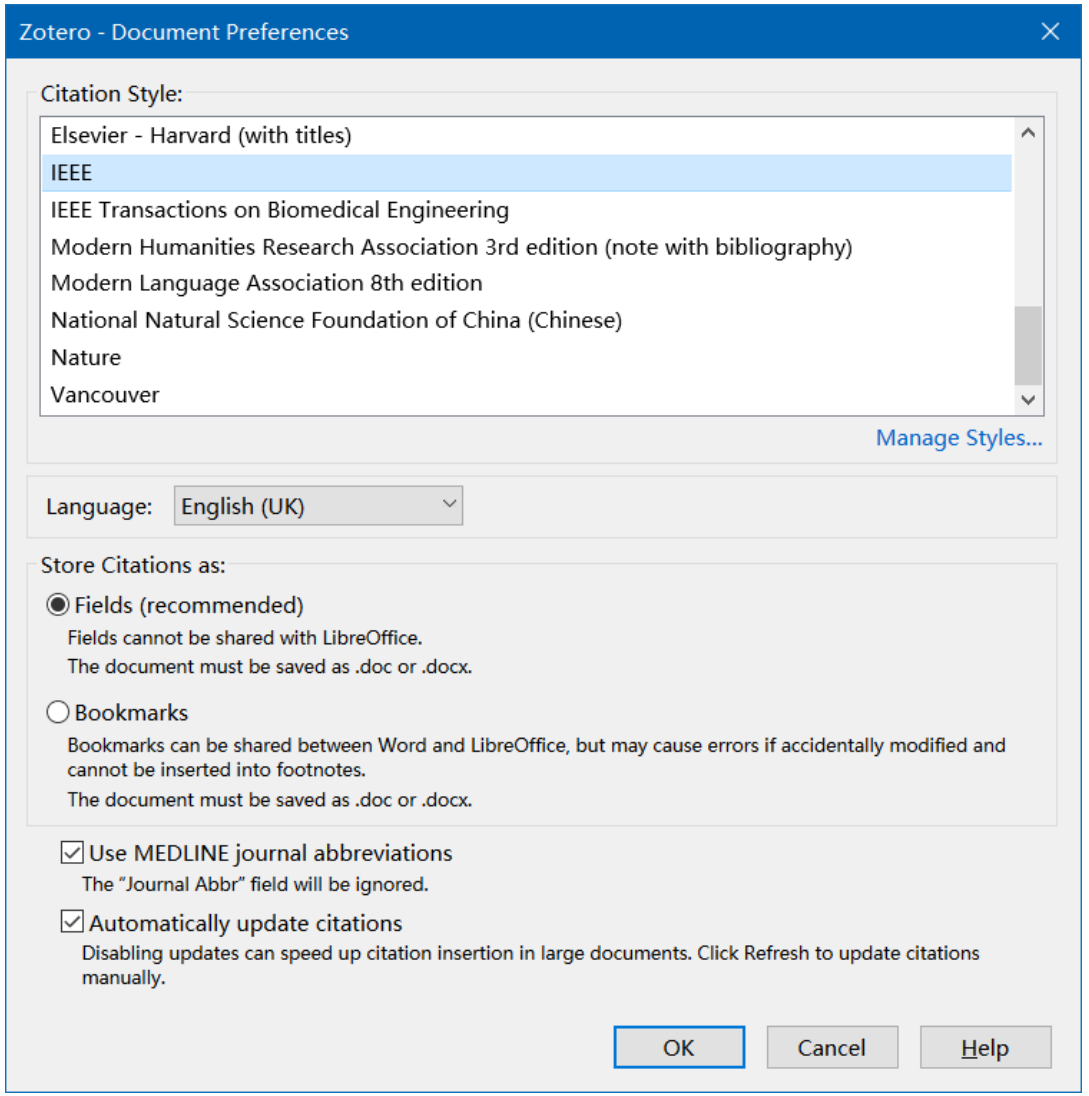


Sync with Zotero or WebDAV

- Zotero provides cloud sync storage with 1GB
- Consider using WebDAV to sync the library

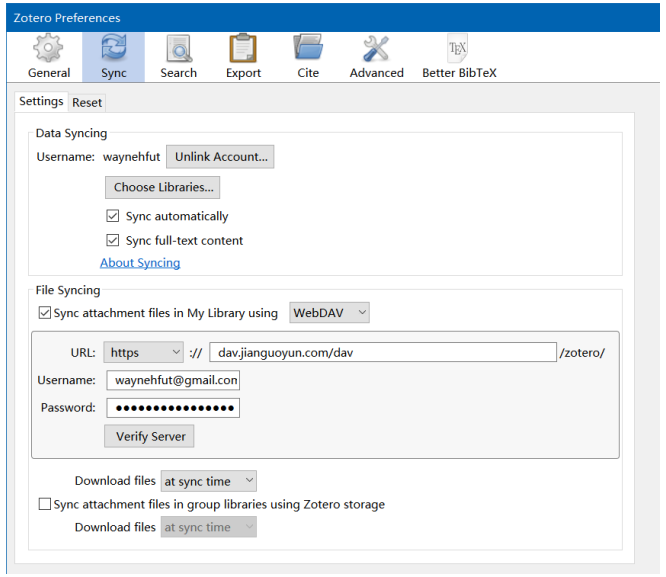
Example

Server: https://dav.jianguoyun.com/dav/

Account: waynehfut@gmail.com

Password: (Password)

Name	Authorization Date	Password	
api	2018-04-17	Display Password	Revoke
keepass	2020-09-28	Display Password	Revoke
zerote	2019-01-06	Display Password	Revoke
坚果云收件箱	2019-10-15	Display Password	Revoke
薄荷	2019-10-17	Display Password	Revoke



Some useful link

- Zotero中文教程

https://www.zotero.org/support/zh/quick_start_guide

- LaTeX Wiki

https://en.wikibooks.org/wiki/LaTeX/Tables

- 使用LaTeX写论文

https://blog.waynehfut.com/2020/01/20/intro-to-tex/

- 20分钟学会使用Git

https://blog.waynehfut.com/2020/02/20/quickgittur/

Cheers!

Hao Wang

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