Overleaf

Collaborative Writing and Publishing with LaTeX on Overleaf

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What's with the ducks?!

Rubber Duck Debugging: `https://www.overleaf.com/blog/274`

Contents

1 Introduction to LaTeX

2 Introduction to Overleaf

3 Getting More Out of Overleaf

Workshop Agenda

1. Introduction to LaTeX
2. Introduction to Overleaf
3. Getting More Out of Overleaf

(I hope this doesn't happen to anyone, really…)

Why LaTeX?

- It makes beautiful documents
  - *Structured*, *consistently formatted* documents
  - It's easy to spot a LaTeX document in a pile of Word docs
- It was created by scientists, for scientists
  - *Complex* documents (cross-references, citations, etc.)
  - A large and active community
- It's powerful; you can extend it
  - Packages for papers, presentations, spreadsheets, …
  - (This deck was made with LaTeX!)

Where do I get it from?

Online	*Overleaf* ☺
Windows	*MikTeX*, TeX Live
GNU/Linux	TeX Live
Mac	MacTeX (based on TeX Live)
Editors	vi, emacs, Texmaker, TeXworks, Texstudio, TeXshop, TeXnicCenter, Sublime Text…

How do I use it?

- You write your document in `plain text` with *commands* that describe its structure and meaning
- The `latex` engine processes your text and commands to produce a beautifully formatted document.

```
The rain in Spain falls \emph{mainly} on the plain
```

The rain in Spain falls *mainly* on the plain

Overleaf

Structured Documents

A Minimal LaTeX Document

```
%% First LaTeX file!
%% (I'm just a comment)
\documentclass{article}

\title{Your Title}
\author{Your Name}

\begin{document}
\maketitle

\tableofcontents

\section{Section Title}
Hello World!
\end{document}
```

Your Title

Your Name

September 15, 2016

Contents

1 Section Title 1

1 Section Title

Hello World! This is some text to show how paragraphs work. This is some text to show how paragraphs work. This is some text to show how paragraphs work. This is some text to show how paragraphs work.

This is some text to show how paragraphs work. This is some text to show how paragraphs work.

Sectional Headings & Cross References


```
\section{Introduction}

This is the Introduction.
We'll discuss some case
studies in section
\ref{sec:cases}.

\section{Background}

This is just some filler
information.

\subsection{Case Studies}
\label{sec:cases}

Yep, what we've all been
waiting for!
```

Contents

1 Introduction 1

2 Background 1

2.1 Case Studies 1

1 Introduction

This is the Introduction. We'll discuss some case studies in section 2.1.

2 Background

This is just some filler information.

2.1 Case Studies

Yep, what we've all been waiting for!

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Text formatting

Font weights, styles, families, sizes


```
This is \textbf{bold}.

This is \emph{italic} and so is \textit{this}.

This is \textsf{sans serif},
this is \texttt{monospaced}.

This is {\Large Large}, this is {\scriptsize scriptsize}-d.
```

This is **bold**.
This is *italic* and so is *this*.
This is sans serif, this is `monospaced`.
This is Large, this is scriptsize-d.

Itemized and Numbered Lists


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

\begin{enumerate}
\item Number one
\item Number two
\end{enumerate}
```

- Bullet 1
- Bullet 2

1. Number one
2. Number two

Overleaf

Citations and Bibliography

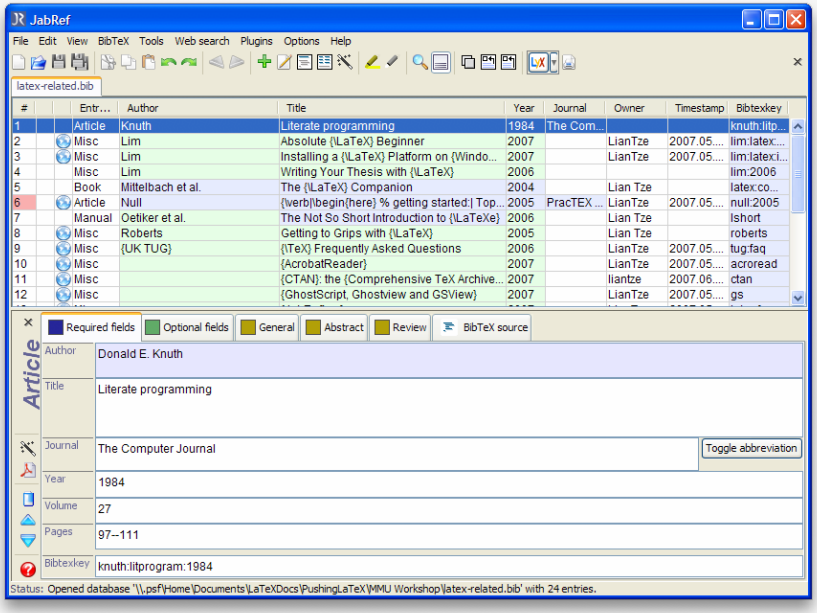
- A friend of LaTeX for processing citations and references
- Keep a reference database in a `.bib` file
- Only entries that has been cited in a document will get listed in the references
- Like EndNote (but more flexible, IMHO)

How does a `.bib` *file look like?*


```
@article{knuth:1984,
  author = {Donald E. Knuth},
  title = {Literate programming},
  journal = {The Computer Journal},
  year = {1984},
  volume = {27},
  number = {2},
  pages = {97--111},
  address = {Oxford, UK},
  publisher = {Oxford University Press}
}
```

I have to type all that?!

- You can use JabRef (`http://jabref.sourceforge.net`)



- Or grab the entries from Google Scholar
- Or export them from Mendeley/Zotero/EndNote…

BibTeX in action


```
\cite{latex:companion} is a useful book. Knuth introduced
the literate programming paradigm while developing \TeX{}
\cite{knuth:1984}.

\bibliographystyle{IEEEtran}
\bibliography{latex-related}
```

[1] is a useful book. Knuth introduced the literate programming paradigm while developing TeX [2].

[1] F. Mittelbach, M. Goosens, J. Braams, D. Carlisle, and C. Rowley, *The LaTeX Companion*, 2nd ed., ser. Addison-Wesley Series on Tools and Techniques for Computer Typesetting. Boston, MA, USA: Addison-Wesley, 2004.

[2] D. E. Knuth, "Literate programming," *The Computer Journal*, vol. 27, no. 2, pp. 97–111, 1984.

Compiling…

1. `pdflatex yourfile`
2. `bibtex yourfile`
3. `pdflatex yourfile`
4. `pdflatex yourfile`
5. `pdflatex yourfile`

There are tools *(hint, hint)* to run these automatically!

Overleaf

Graphics, Figures and Tables

Graphics


```
\usepackage{graphicx}
...
\includegraphics[width=.3\textwidth]{NTU-logo}
```

- `pdflatex` embeds JPG, PNG and PDF graphic files
- (no file extension ⇒ automatically looks for `.jpg`, `.png`, `.pdf`)
- Other ways to specify the size:
  `width=5cm`, `height=120mm`, `scale=1.1`

Figures with captions


```
\begin{figure}[hbt!]\centering
\includegraphics[width=.3\textwidth]{NTU-logo}
\caption{NTU logo}
\label{fig:ntu:logo}
\end{figure}

Figure \ref{fig:ntu:logo} depicts NTU's logo.
```

Figure 2: NTU logo

Figure 2 depicts NTU's logo.

Tabulars


```
\begin{tabular}{| l | c || r |}
\hline
one      &   two two       &  three three three \\ \hline
one one  &   two two two   &  three             \\ \hline
one one one &   two   &  three three       \\ \hline\hline
\multicolumn{2}{|l||}{In the end} & What?!    \\ \hline
\end{tabular}
```

one	two two	three three three
one one	two two two	three
one one one	two	three three
In the end		What?!

(Use `http://www.tablesgenerator.com` or other tools)

Tables with Captions


```
\begin{table}\centering
\caption{Sample table}\label{tab:sample}
\begin{tabular}...
...
\end{tabular}
\end{table}

Table \ref{tab:sample} is a very simple example.
```

Table 1: Sample table

one	two two	three three three
one one	two two two	three
one one one	two	three three
In the end		What?!

Table 1 is a very simple example.

Overleaf

Mathematics

TEX was created to make beautiful maths books!


```
As we know $E = mc^2$ and so \ldots

As we know from Einstein (\ref{eq:einstein}):

\begin{equation}\label{eq:einstein}
E=mc^2
\end{equation}
```

As we know $E = mc^2$ and so …
As we know from Einstein (1):

$$E = mc^2 \tag{1}$$

Another example

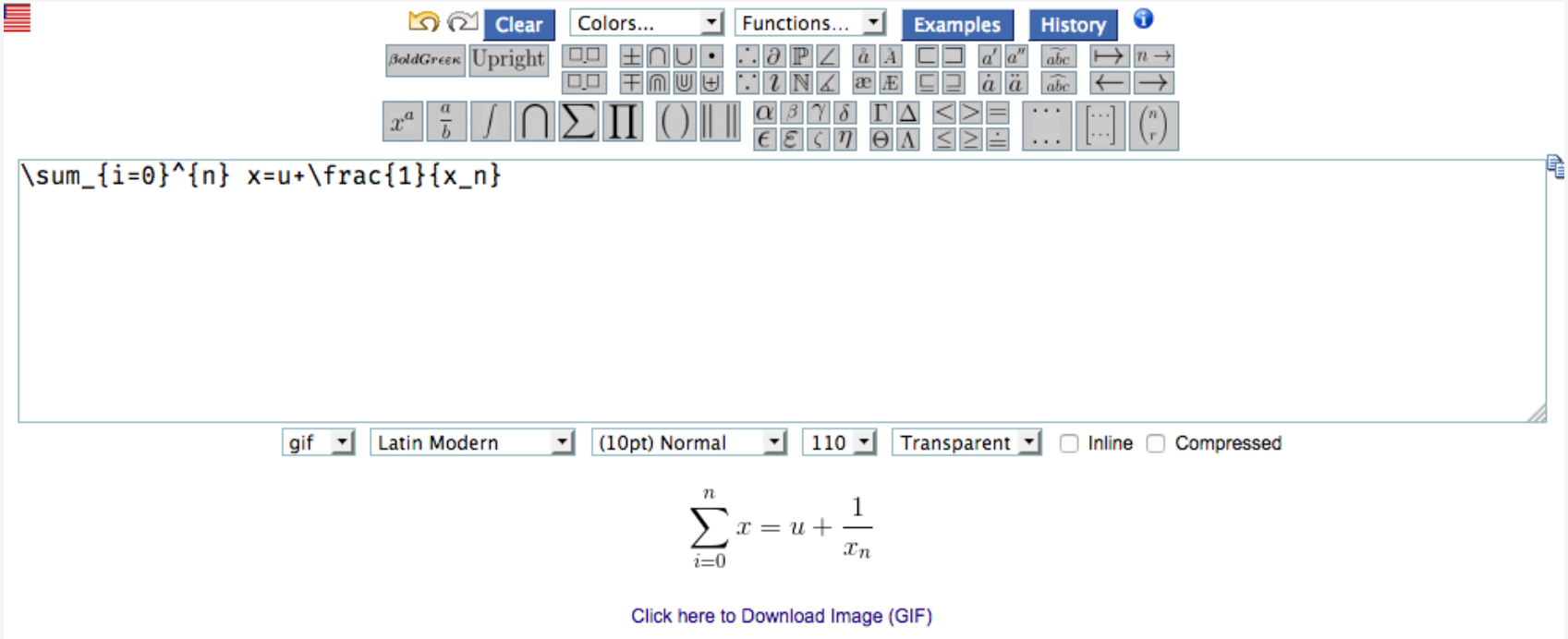

```
\eqref{eq:golden:ratio:fibonacci} relates the golden ratio
and the Fibonacci series.  Recall that the golden ratio,
$\phi = \frac{1}{2} (1 + \sqrt{5})$.

\begin{equation}\label{eq:golden:ratio:fibonacci}
\phi = 1 + \sum ^{\infty} _{n=1}
                \frac{ (-1) ^{n+1} }{ F_n F_{n+1} }
\end{equation}
```

(2) relates the golden ratio and the Fibonacci series. Recall that the golden ratio, $\phi = \frac{1}{2}(1 + \sqrt{5})$.

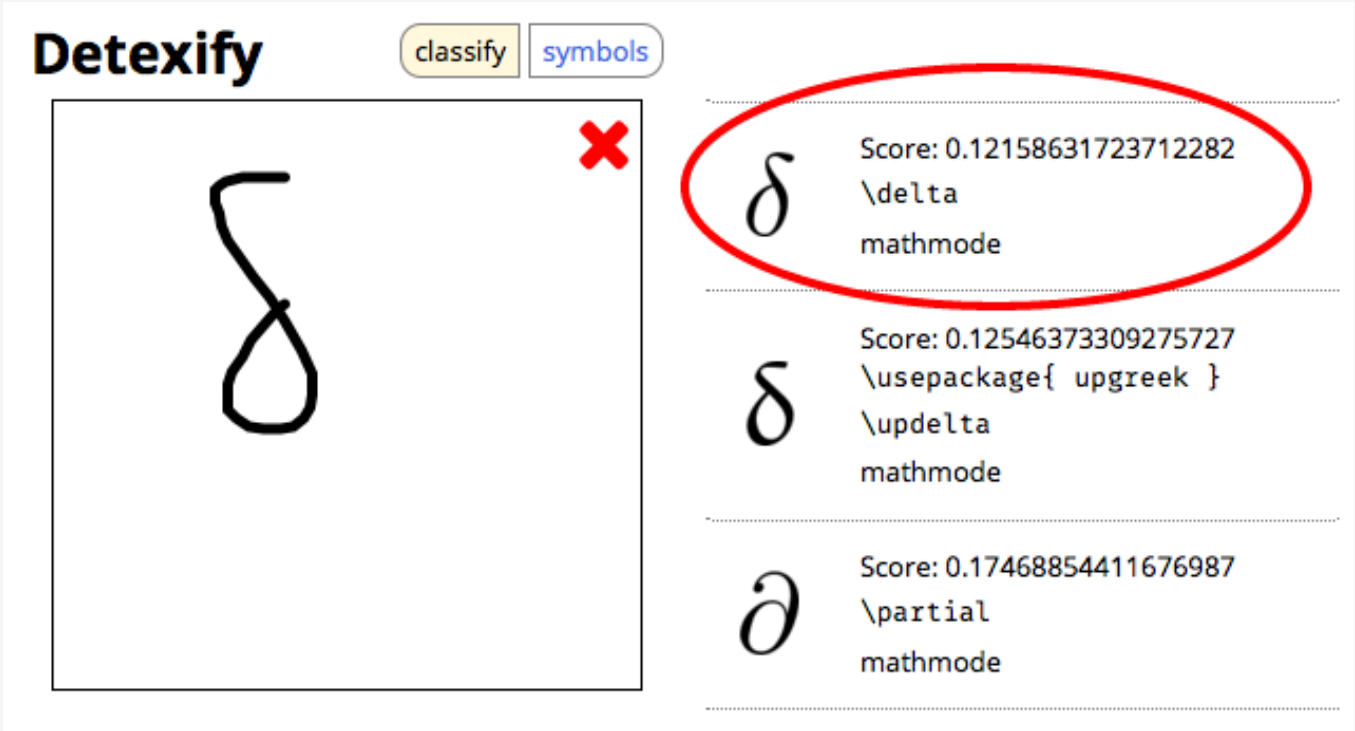
$$\phi = 1 + \sum_{n=1}^{\infty} \frac{(-1)^{n+1}}{F_n F_{n+1}} \tag{2}$$

Some helpful tools



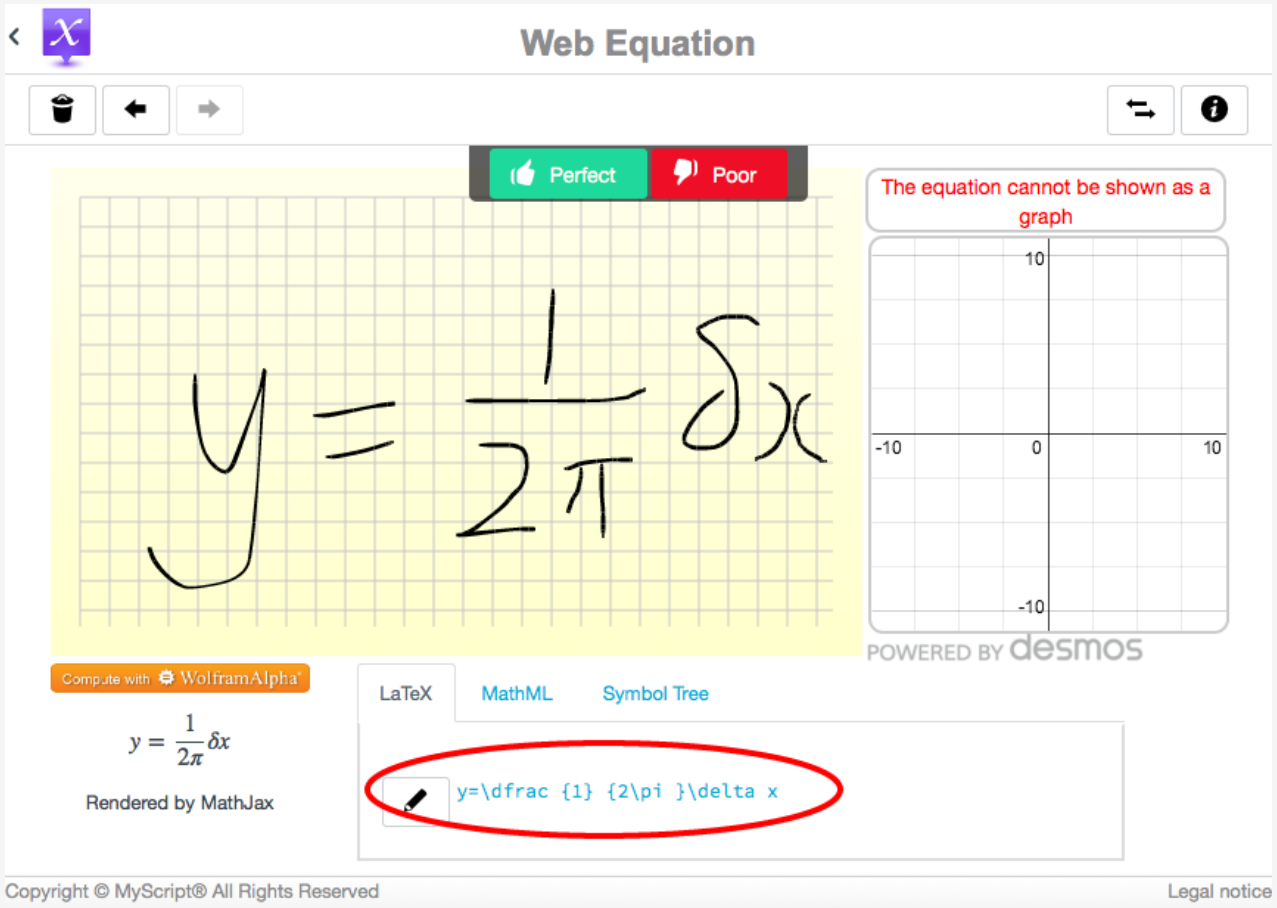
https://www.codecogs.com/latex/eqneditor.php

Some helpful tools



http://detexify.kirelabs.org/classify.html

Some helpful tools



http://webdemo.myscript.com/views/math.html

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LaTeX is great for other fields, too!

Linguistic Examples with expex


```
\ex\label{basic}
\begingl
\gla An example formatted with expex //
\glb un exemple formaté avec expex //
\glft `A free translation.'//
\endgl
\xe

We have our first glossing example (\ref{basic})!
```

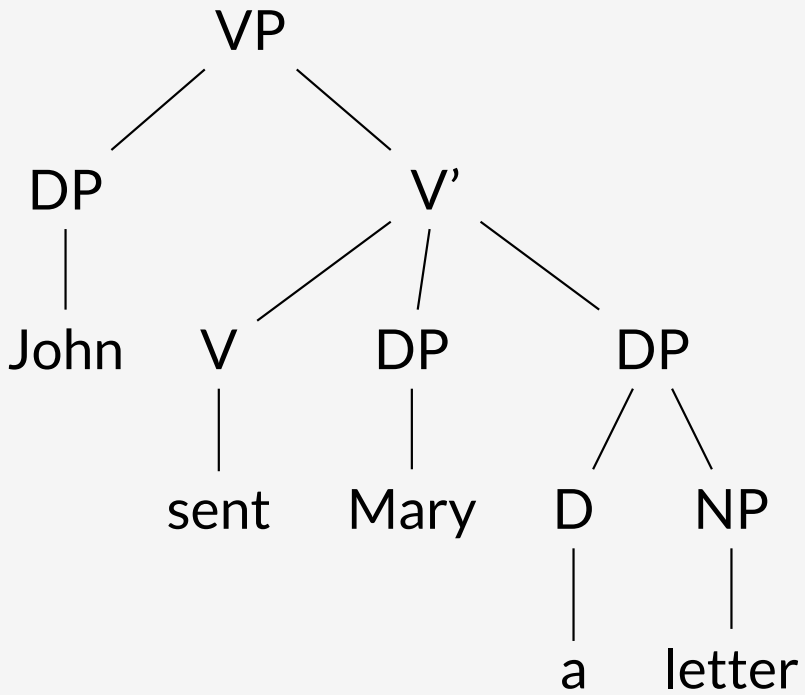
(1) *An example formatted with expex*
un exemple formaté avec expex

'A free translation.'

We have our first glossing example (1)!

Linguistic Trees with `forest`


```
\begin{forest}
[VP
  [DP[John]]
  [V'
    [V[sent]]
    [DP[Mary]]
    [DP[D[a]][NP[letter]]]
  ]
]
\end{forest}
```

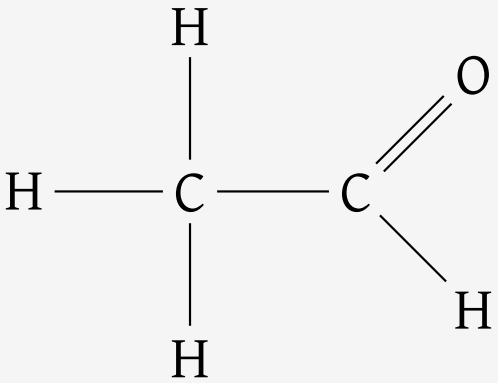


Chemistry with mhchem


```
\ce{SO4^2- + Ba^2+ -> BaSO4 v}

\chemfig{H-C(-[2]H)(-[6]H)-C(-[7]H)=[1]O}
```

$$SO_4^{2-} + Ba^{2+} \longrightarrow BaSO_4\downarrow$$



SI units and values with `siunitx`

```
\SI{3.45d4}{\square\volt\cubic\lumen\per\farad}

\SIlist[per-mode=symbol]{40;85;103}{\kilo\metre\per\hour}

\SIrange{20}{40}{\degreeCelsius}
```

$3.45 \times 10^{4}\,\mathrm{V^{2}\,lm^{3}\,F^{-1}}$
40 km/h, 85 km/h and 103 km/h
20 °C to 40 °C

Aligning decimal values in tables with `siunitx`


```
\begin{tabular}{ S }
\hline
12.345   \\
6,78     \\
-88.8(9) \\
4.5e3    \\
\hline
\end{tabular}
```

12.345
6.78
−88.8(9)
4.5×10^{3}

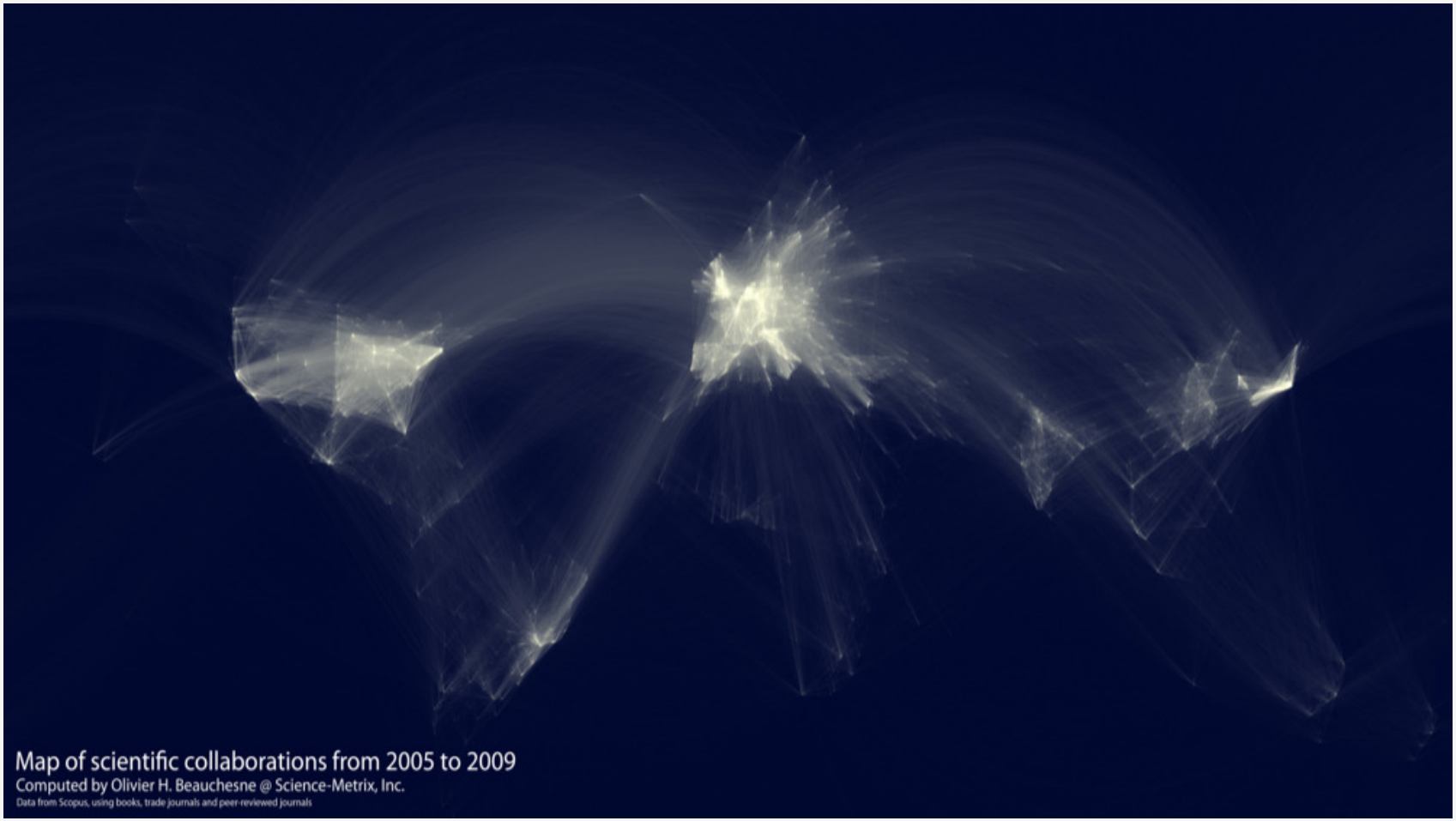
Overleaf

Coffee break!

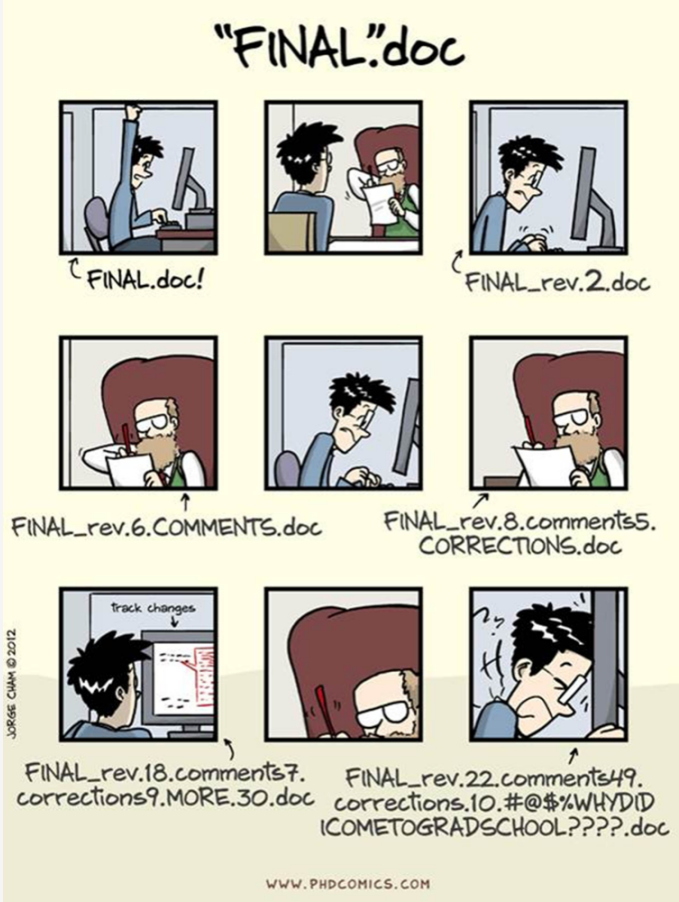
Workshop Agenda

1. Introduction to LaTeX
2. Introduction to Overleaf
3. Getting More Out of Overleaf

The Internet is transforming research…



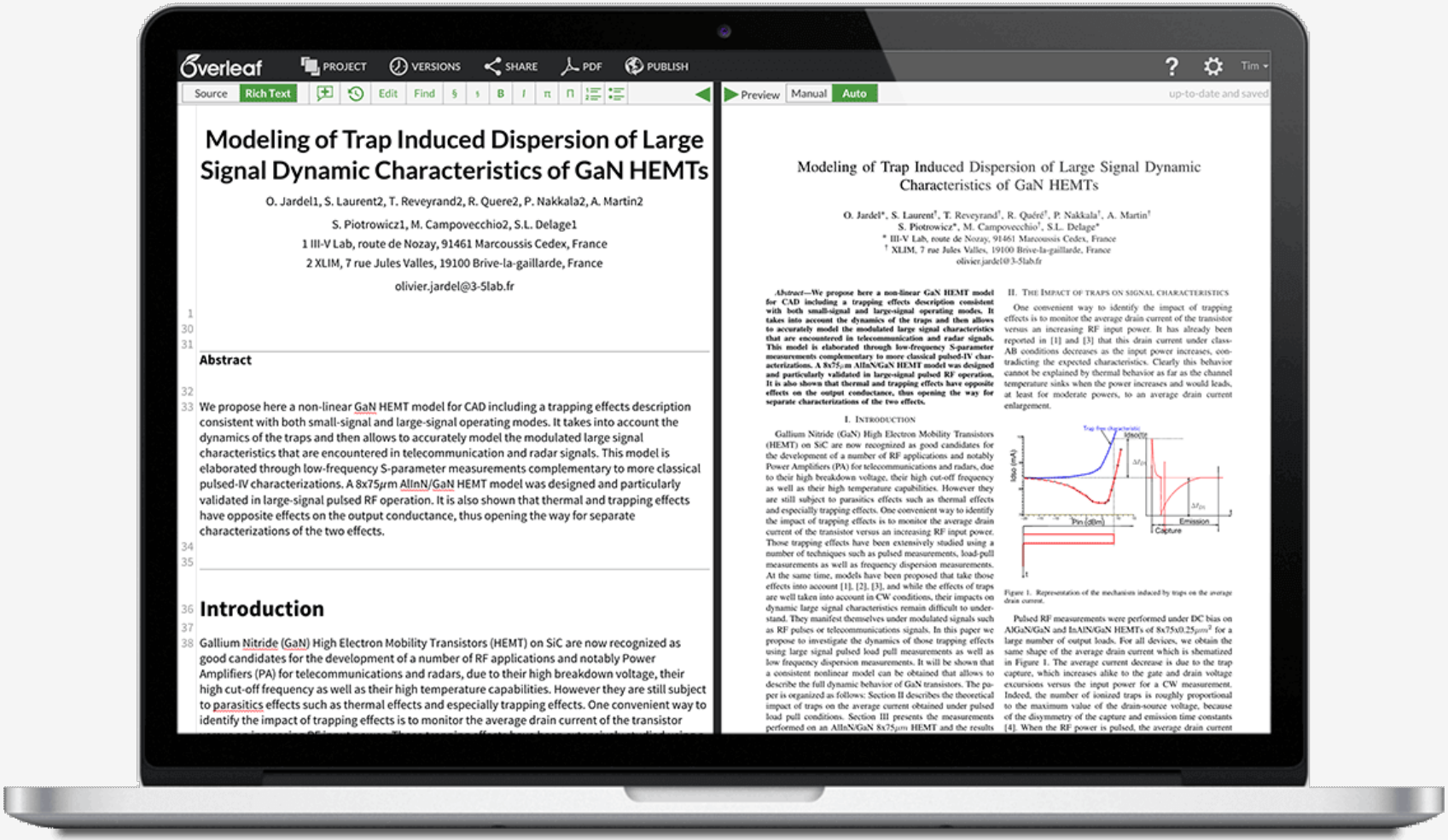
…but writing up is still painful



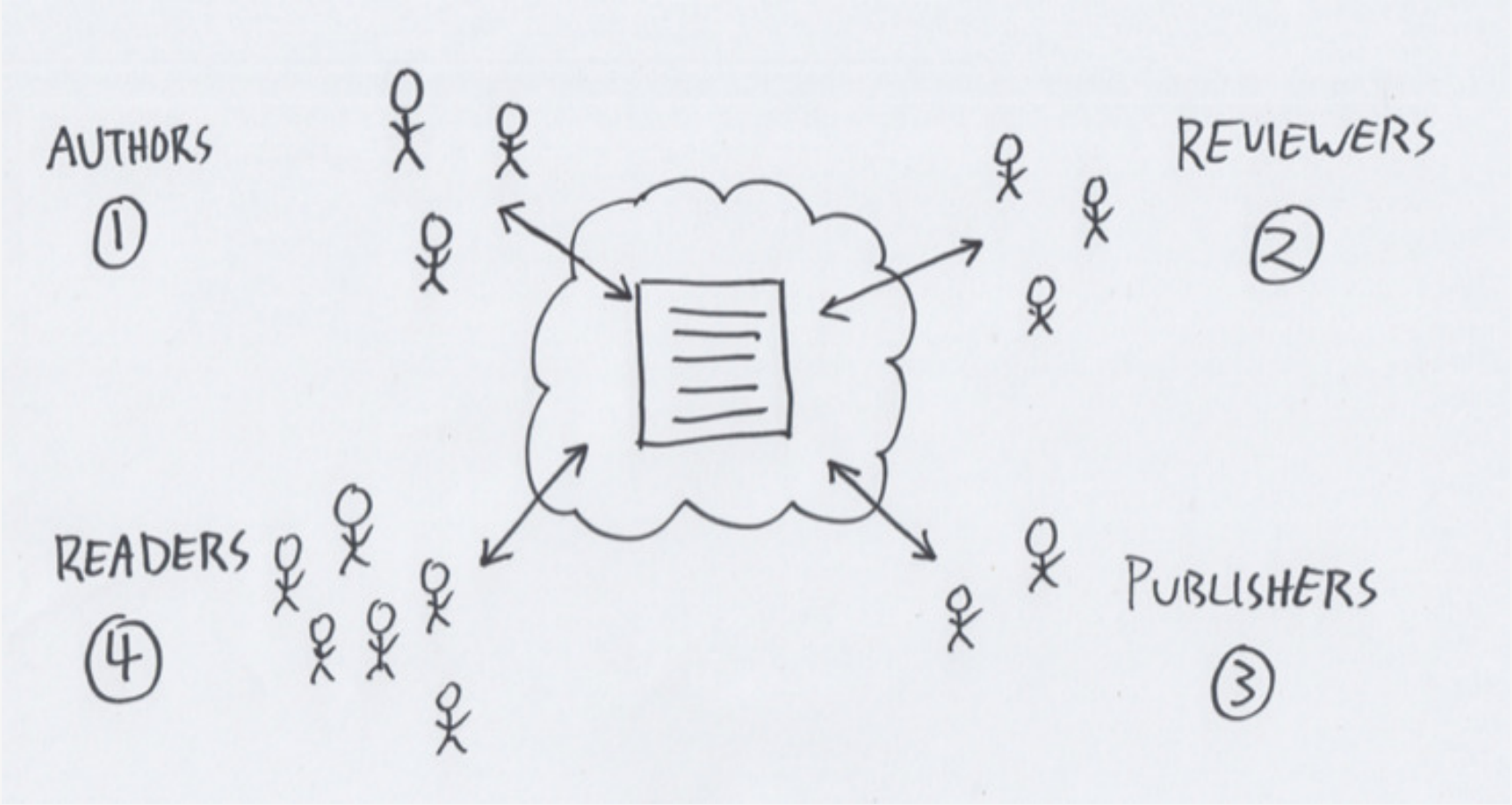
Some of the problems

- Long email chains passing files around
- Dealing with multiple versions of the same document
- Hours spent formatting and typesetting

Overleaf: an online collaborative writing platform



Overleaf: an online collaborative writing platform

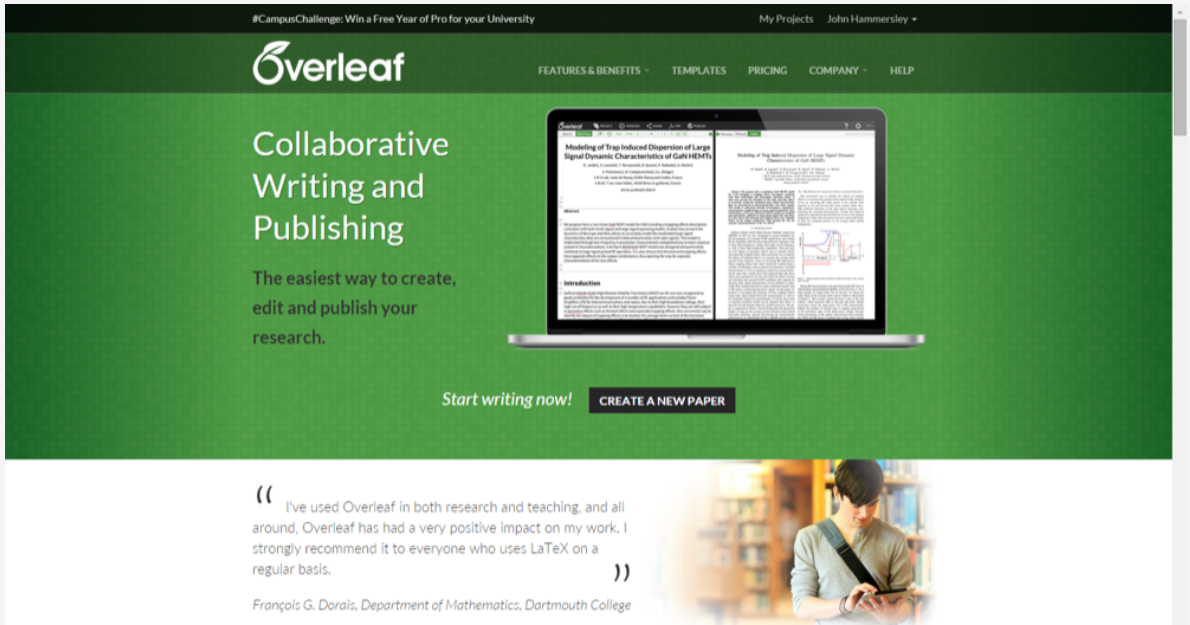


Overleaf

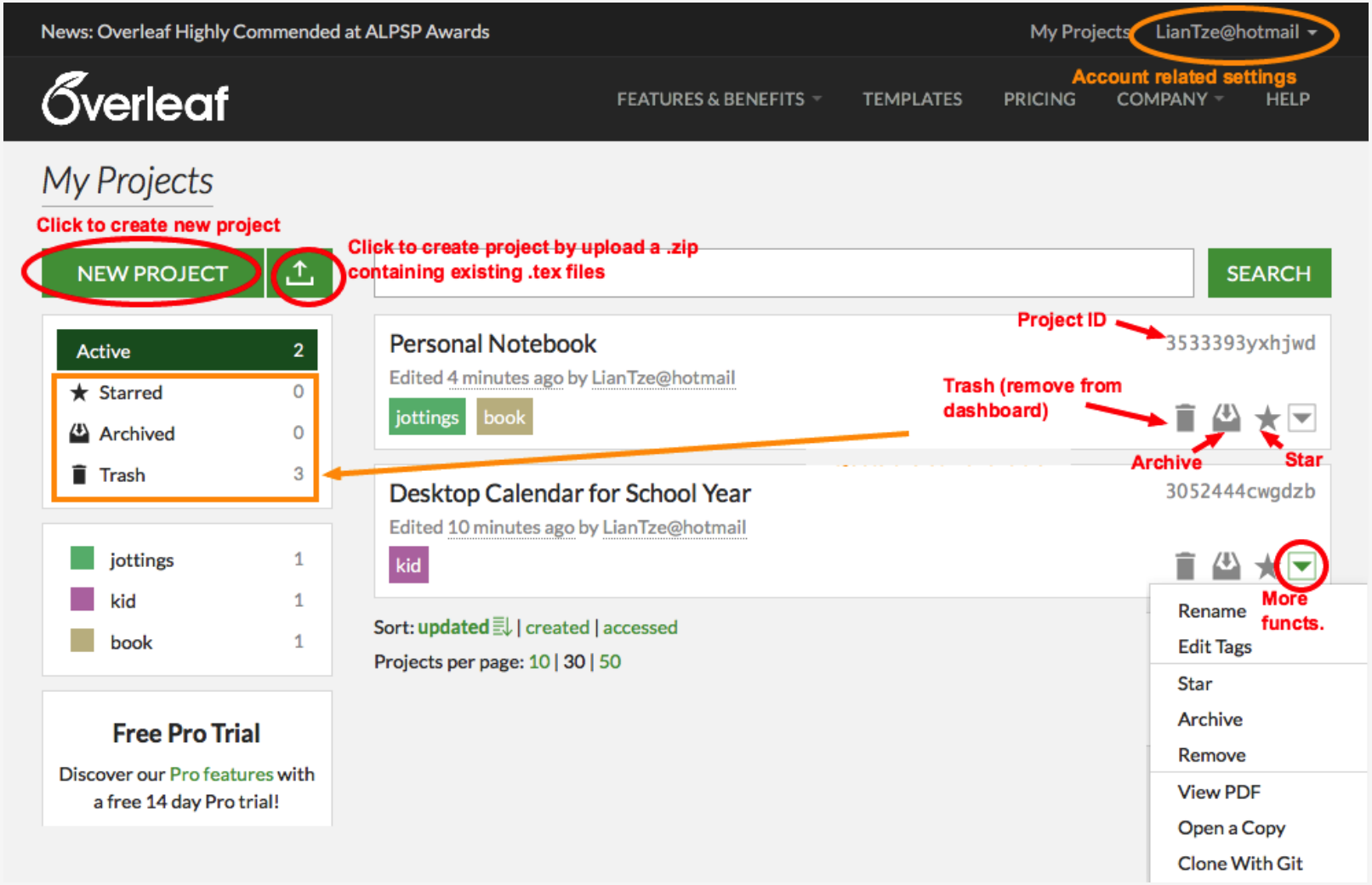
A LaTeX Editor in the Cloud

Make Working with LaTeX Easier

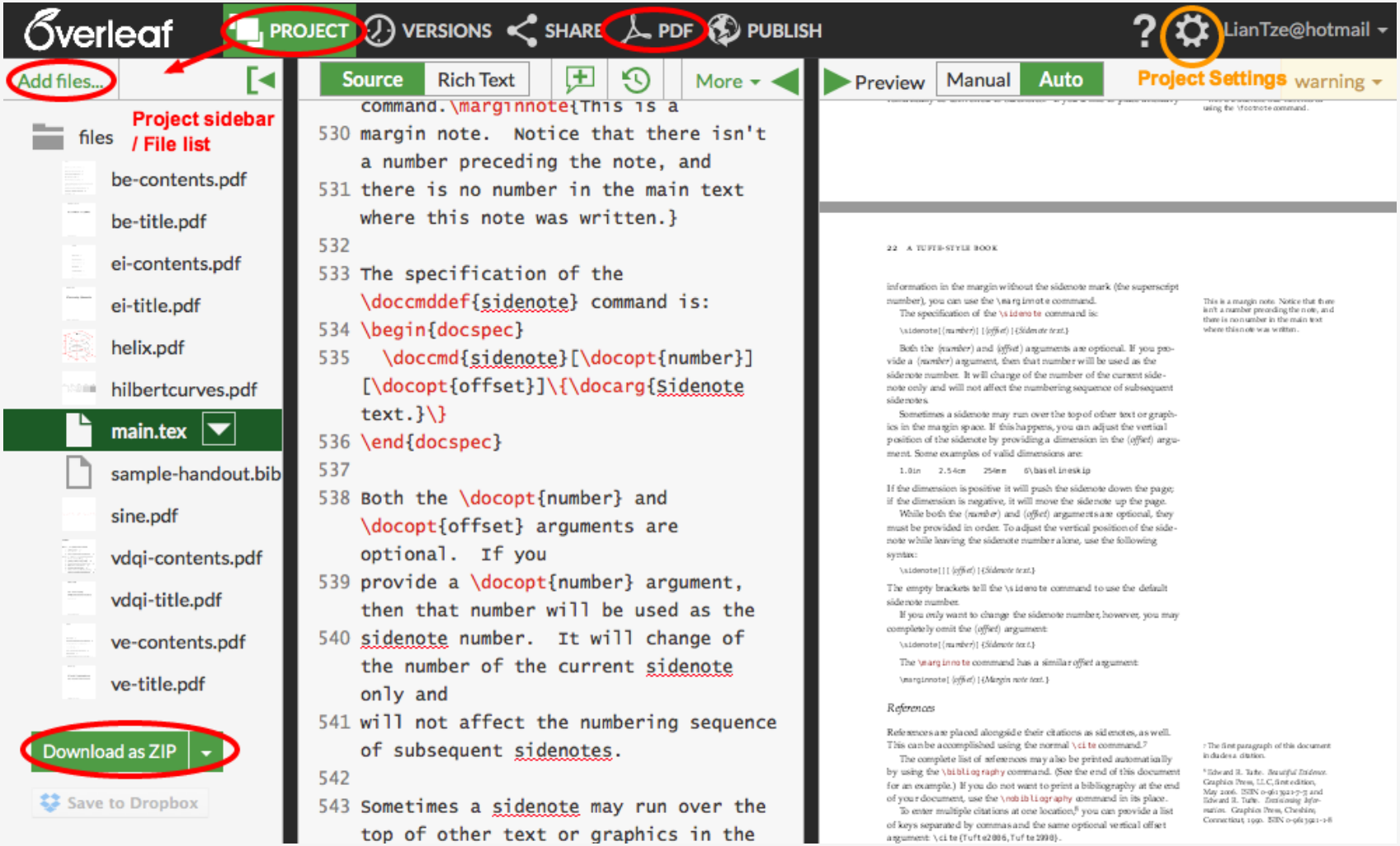
- Cloud-based tools provide LaTeX in your browser
- There's nothing to download or install
- Access your projects from anywhere, any device



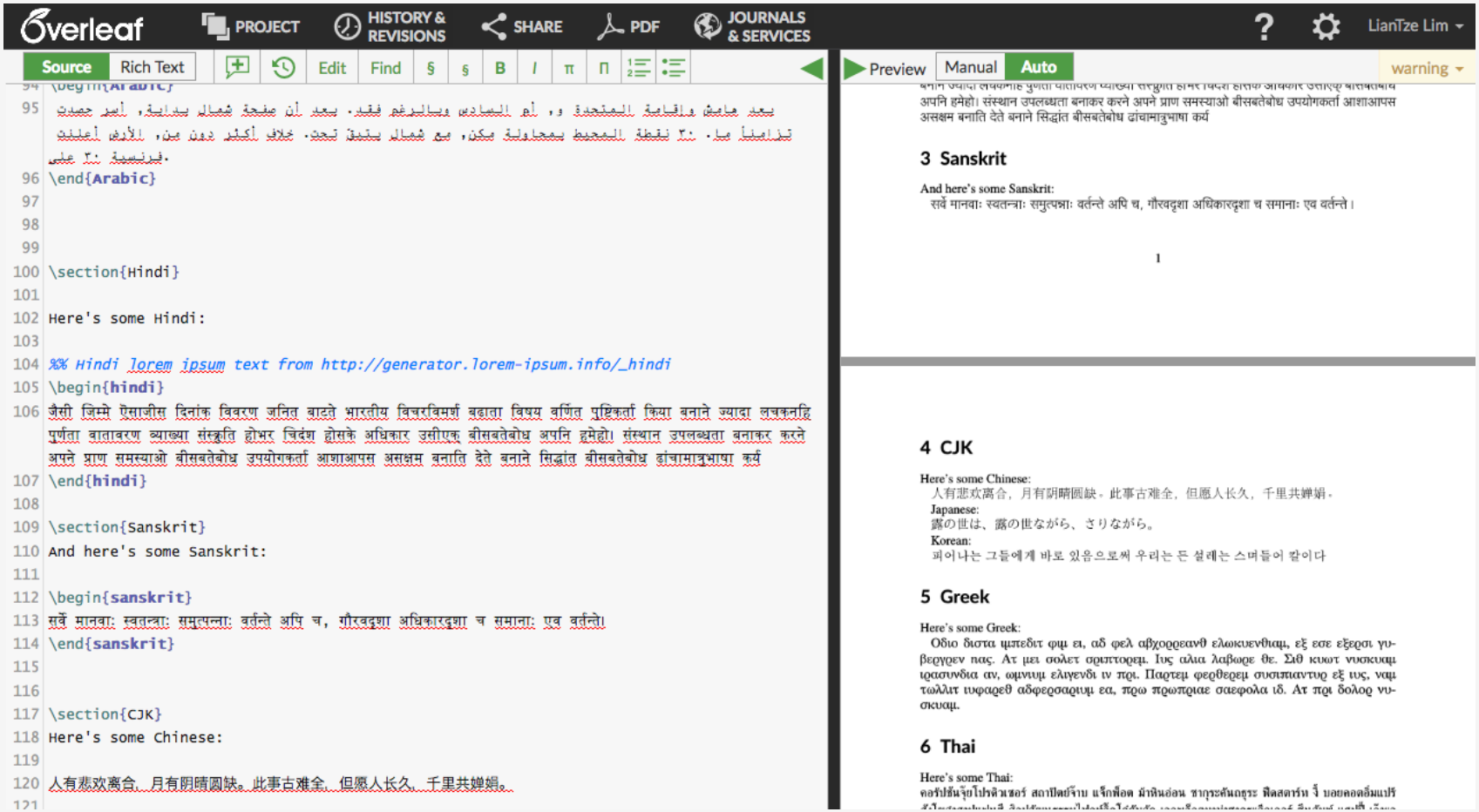
The Dashboard



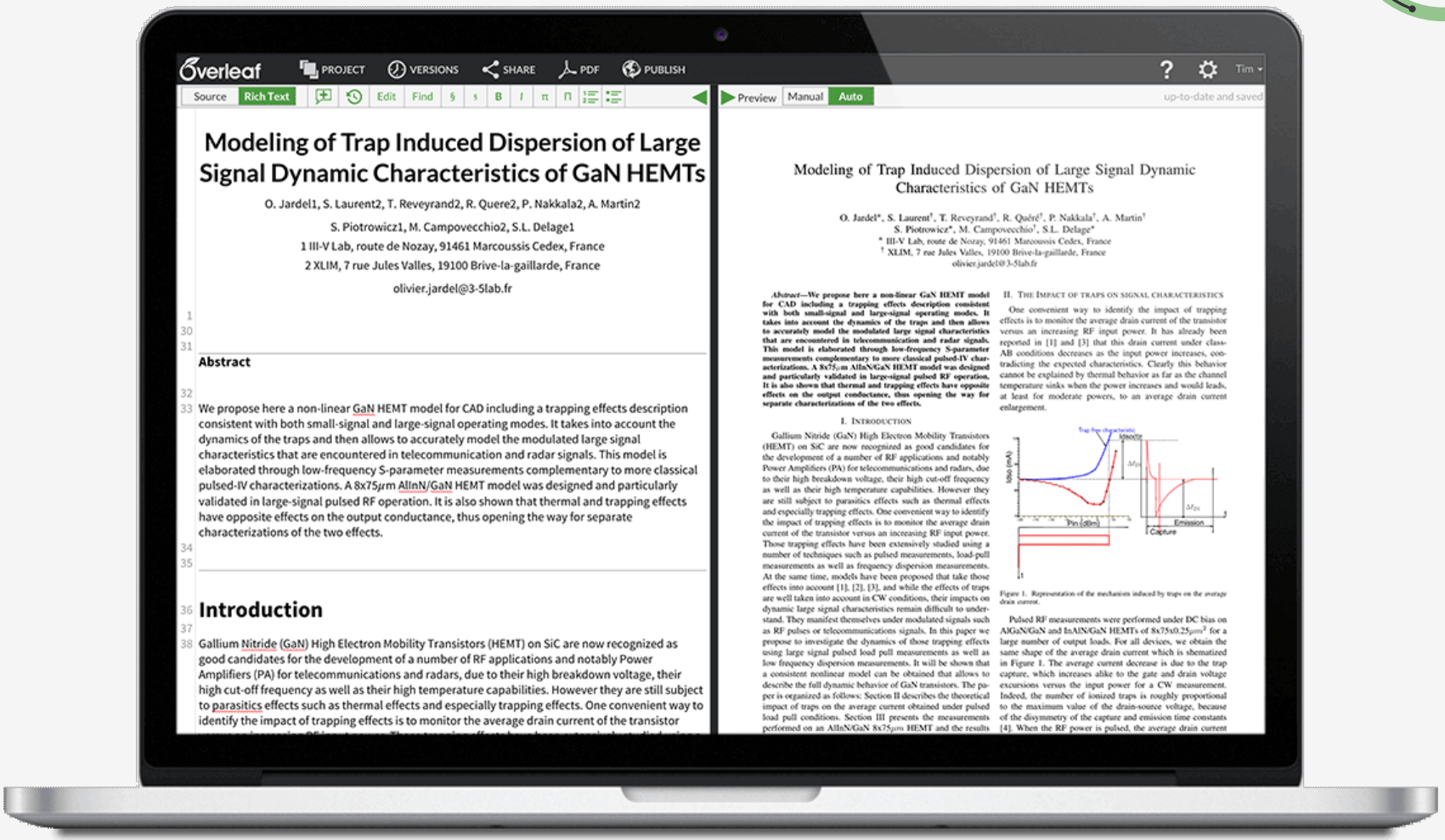
The Editor


Overleaf
PROJECT
VERSIONS
SHARE
PDF
PUBLISH
LianTze@hotmail
Add files...
Project sidebar / File list
files
be-contents.pdf
be-title.pdf
ei-contents.pdf
ei-title.pdf
helix.pdf
hilbertcurves.pdf
main.tex
sample-handout.bib
sine.pdf
vdqi-contents.pdf
vdqi-title.pdf
ve-contents.pdf
ve-title.pdf
Download as ZIP
Save to Dropbox
Source
Rich Text
More
Preview
Manual
Auto
Project Settings
warning
command.\marginnote{This is a
530 margin note. Notice that there isn't
a number preceding the note, and
531 there is no number in the main text
where this note was written.}
532
533 The specification of the
\doccmddef{sidenote} command is:
534 \begin{docspec}
535 \doccmd{sidenote}[\docopt{number}]
[\docopt{offset}]\{\docarg{Sidenote
text.}\}
536 \end{docspec}
537
538 Both the \docopt{number} and
\docopt{offset} arguments are
optional. If you
539 provide a \docopt{number} argument,
then that number will be used as the
540 sidenote number. It will change of
the number of the current sidenote
only and
541 will not affect the numbering sequence
of subsequent sidenotes.
542
543 Sometimes a sidenote may run over the
top of other text or graphics in the

Is Multilingual!



RichText Mode



For co-authors who aren't that comfortable with LaTeX

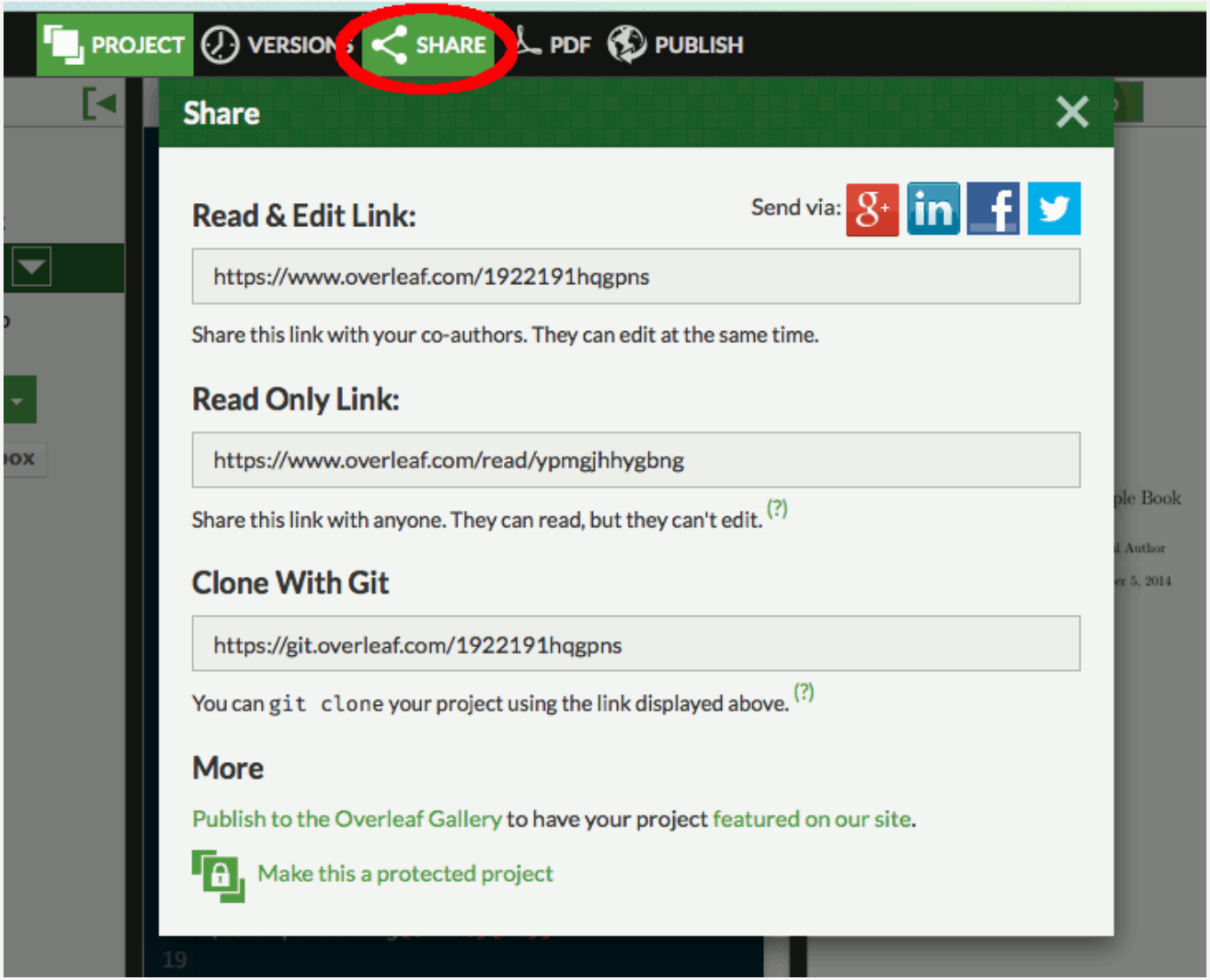
Overleaf

Collaborative Authoring

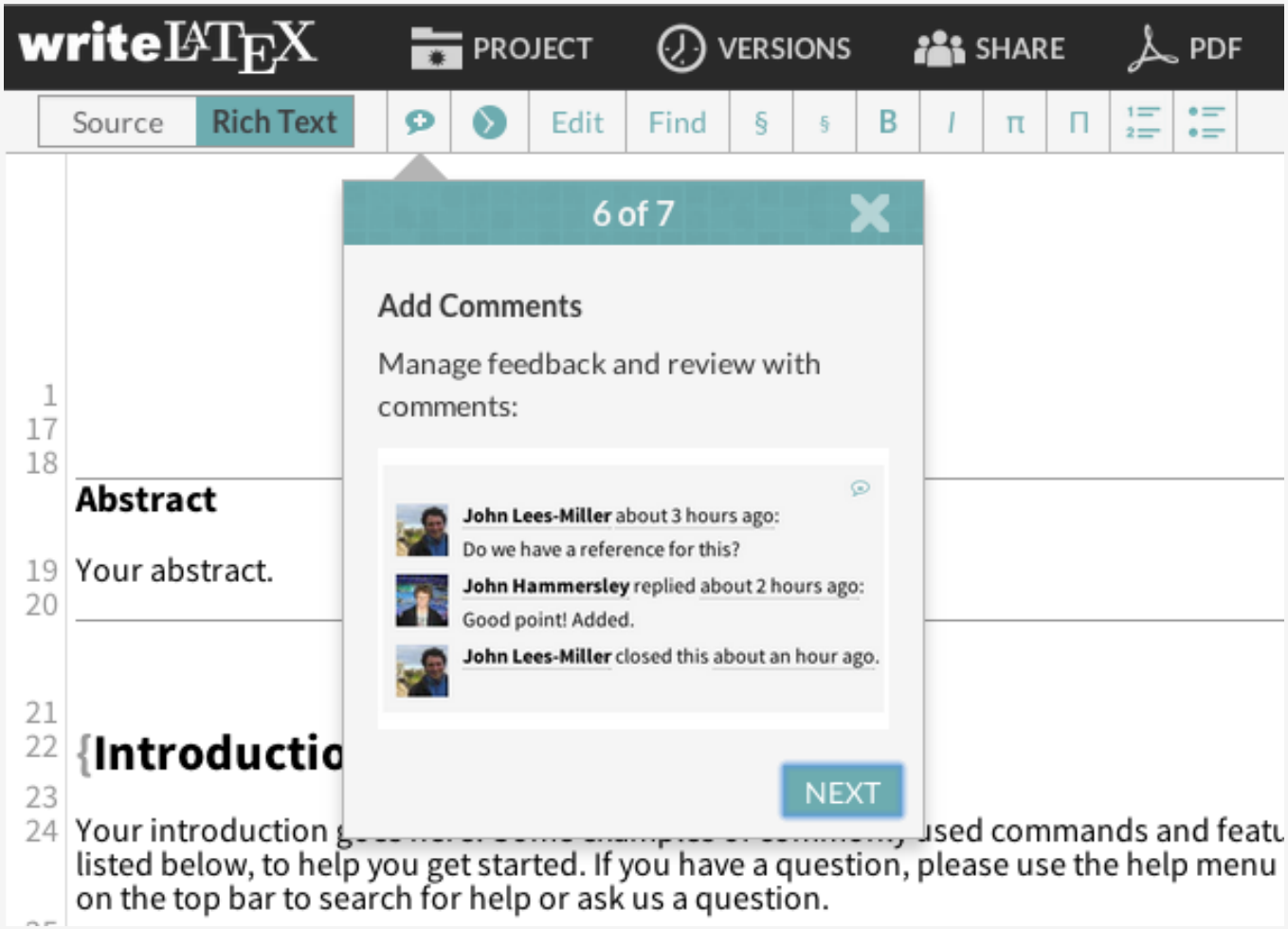
Online collaborative editing tools provide…

- No need to email files – simply send the link
- One version of the document, accessible by all collaborators

Collaborate by sending the project link



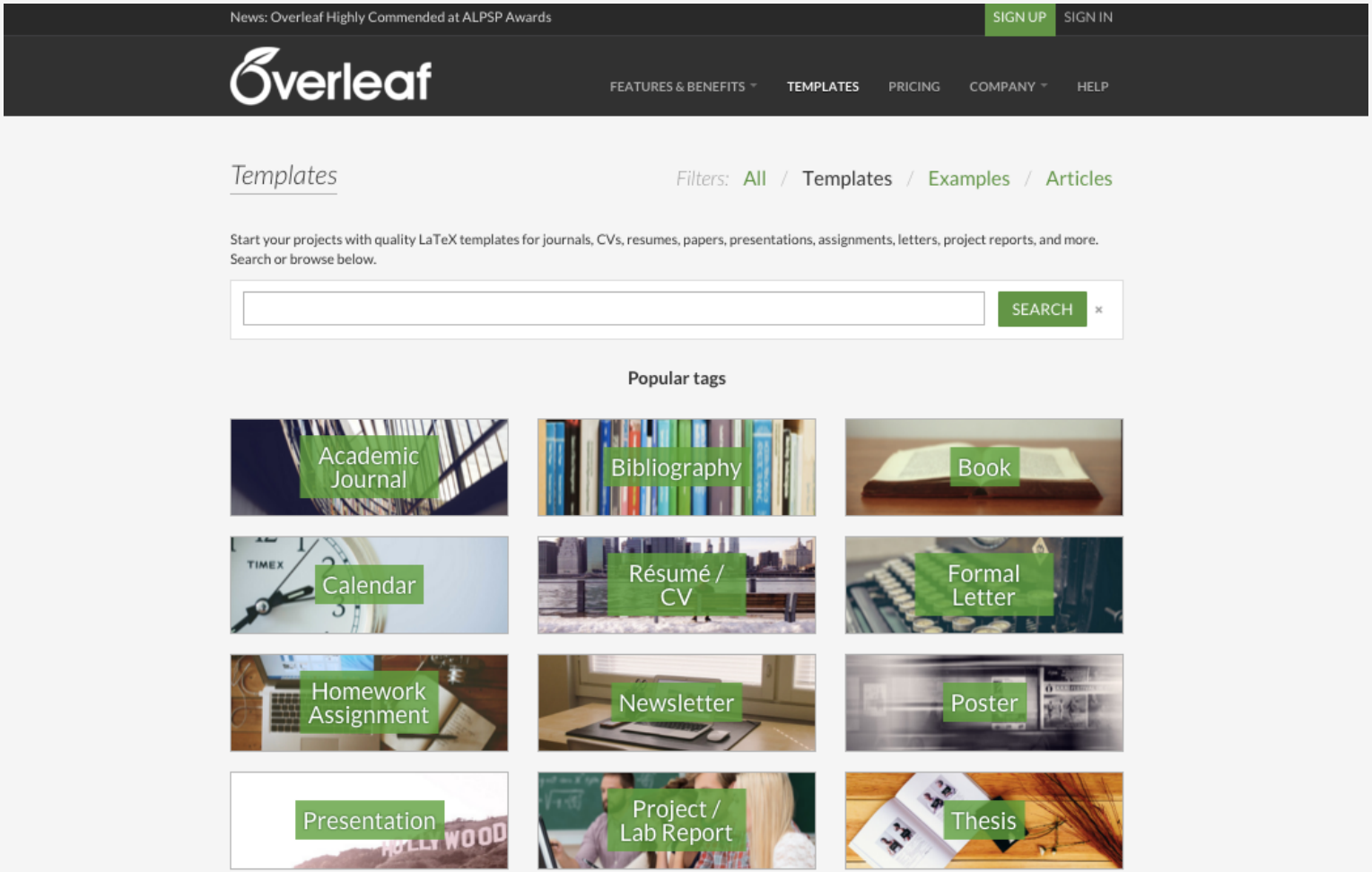
Leave comments for collaborators



Overleaf

Overleaf Gallery: Templates, Examples, Articles

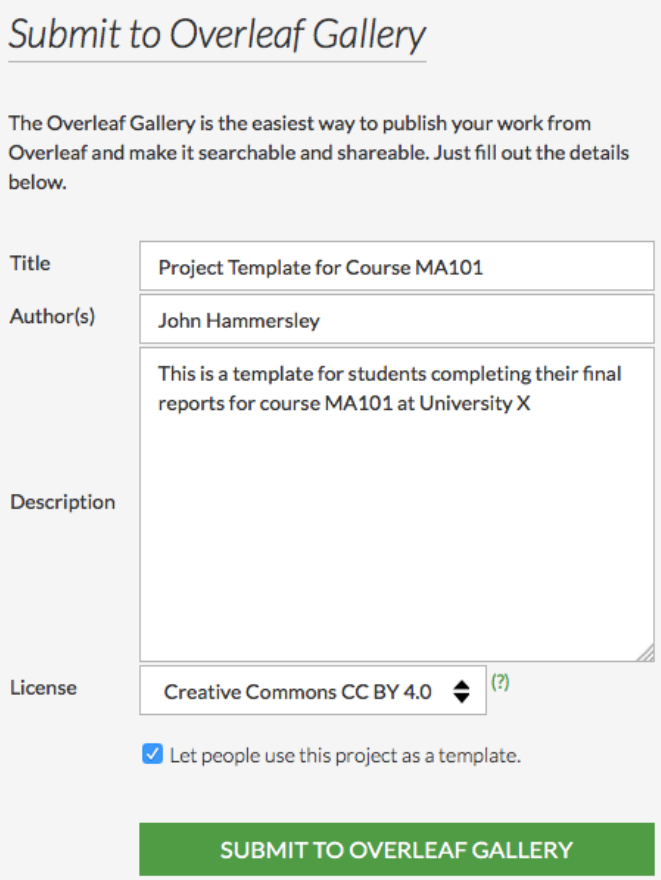
Choose from over 2000 Templates



https://www.overleaf.com/gallery

Submit your own templates or writings!

- Click on *Journals & Services* at top, then *Overleaf Gallery*
- Reports, presentations, theses, jottings, lecture notes/handouts
- Many users post their CVs/résumés!

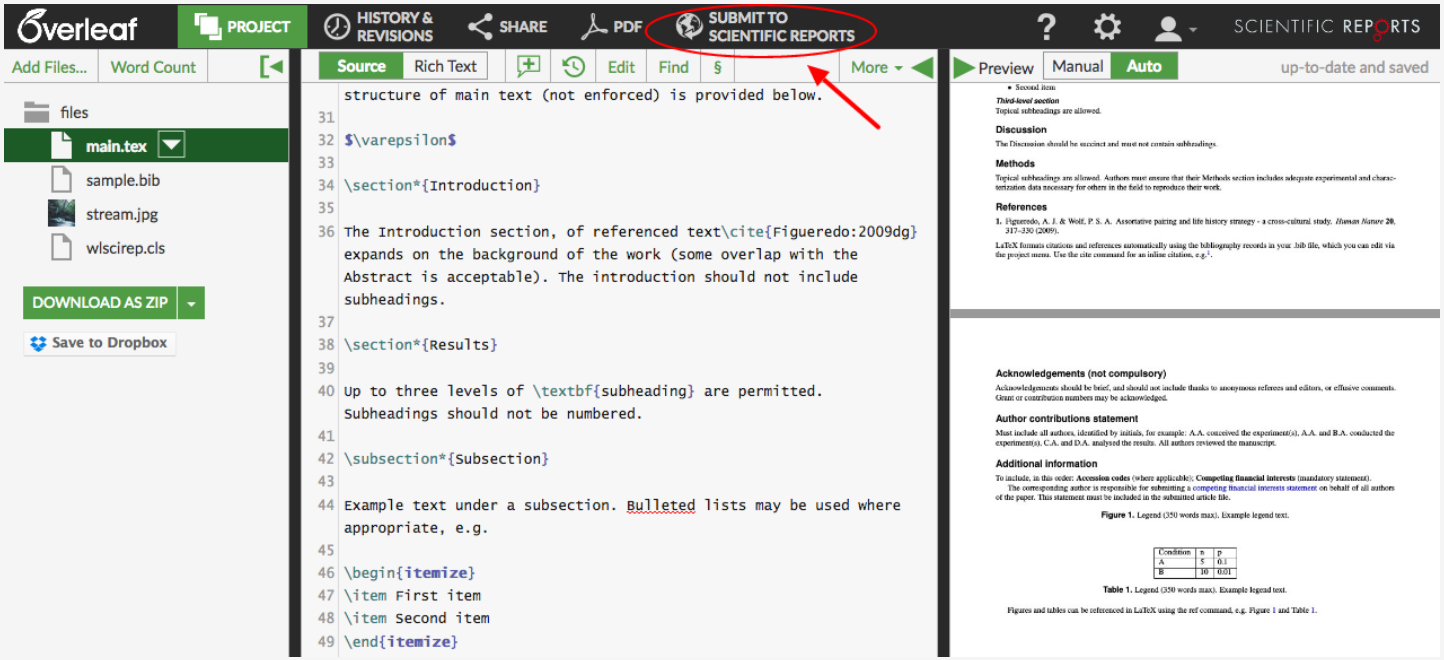


Overleaf

Direct Submission to Journals

Submit to a partner journal from Overleaf

- Download a `.zip` for submission
- Or click on *Submit to…* link of partner journals
- Initial *and* re-submissions



Partners

Publishers, Journals and Repositories linked on Overleaf

	Templates	Submission Type (?)	Journals / Repositories
American Mathematical Society (AMS) VIEW	4	Direct link	Journals 4
American Society of Civil Engineers (ASCE) VIEW	1	Link to Portal	Journals 35
arXiv VIEW	1	Link to Portal	Repositories 18
ASBMB VIEW	1	Link to Portal	Journals 1
Association for Computing Machinery (ACM) VIEW	3	Link to Portal	Journals 45
bioRxiv VIEW	1	Link to Portal	Repositories 27
engrXiv VIEW	1	Direct link	Repositories 1
F1000Research VIEW	2	Direct link	Journals 1

https://www.overleaf.com/publishers

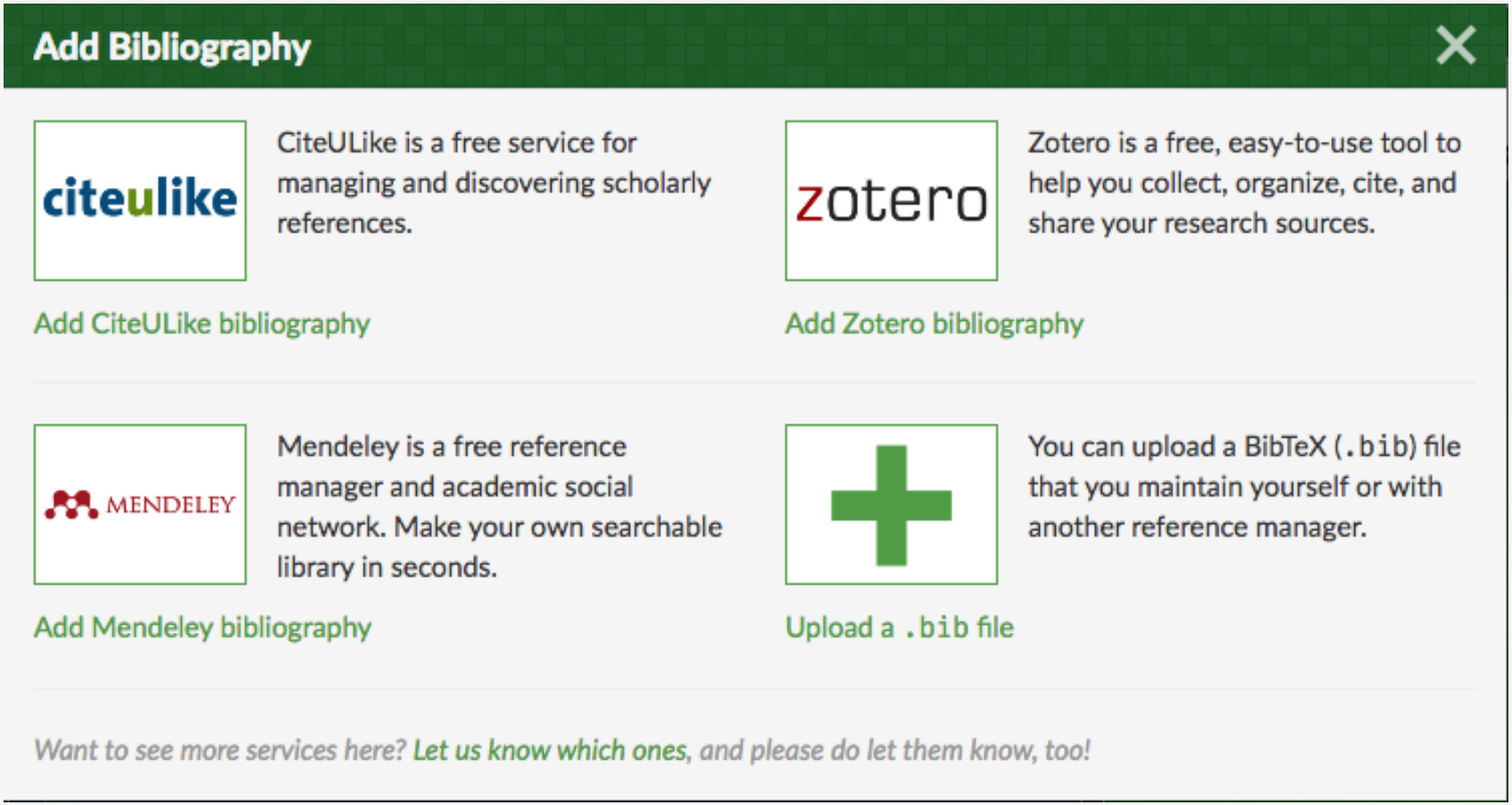
Workshop Agenda

1. Introduction to LaTeX
2. Introduction to Overleaf
3. Getting More Out of Overleaf

Overleaf

Import Zotero/Mendeley/CiteULike Libraries

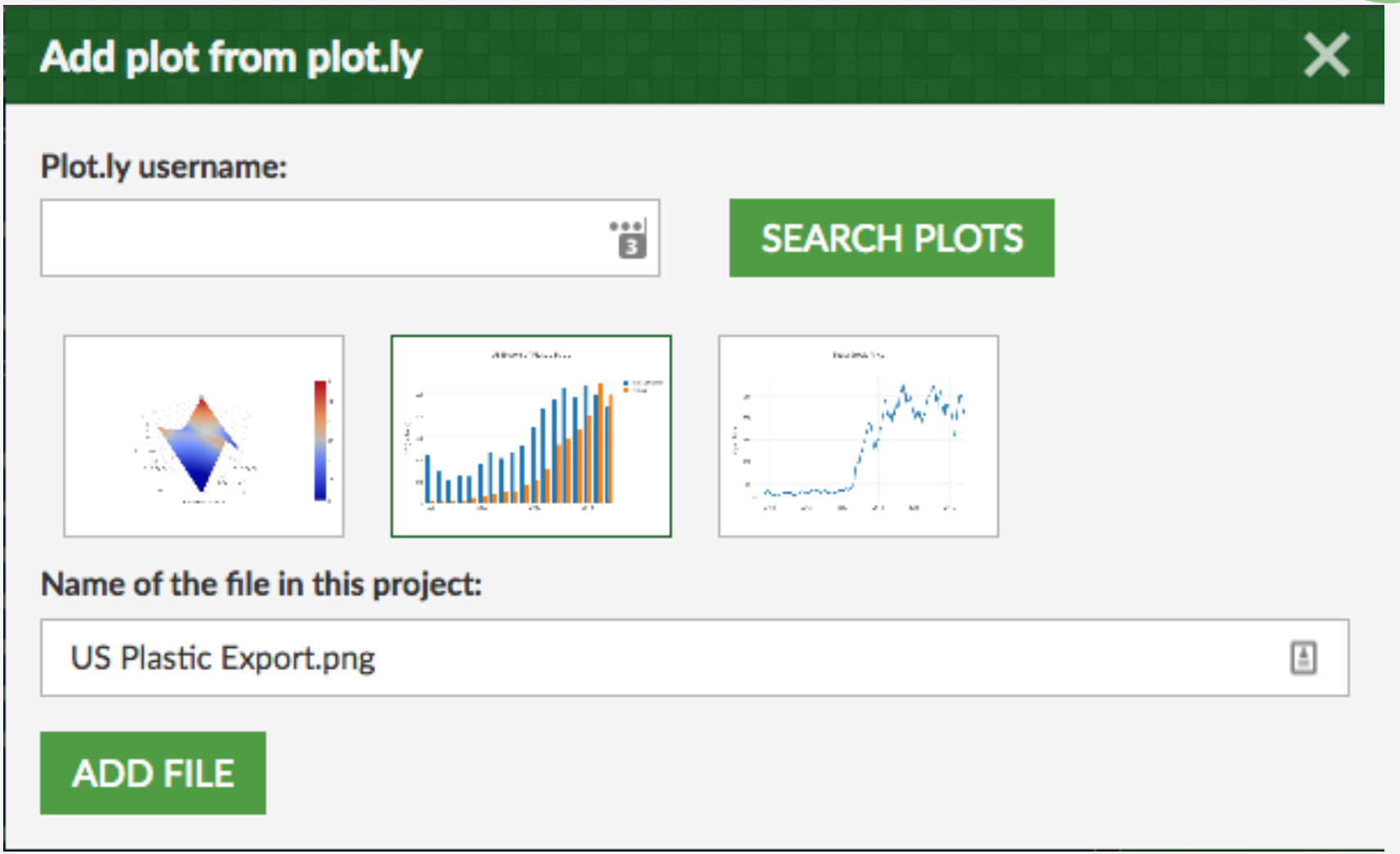
Import from bibliography services



Overleaf

Integration with Plot.ly

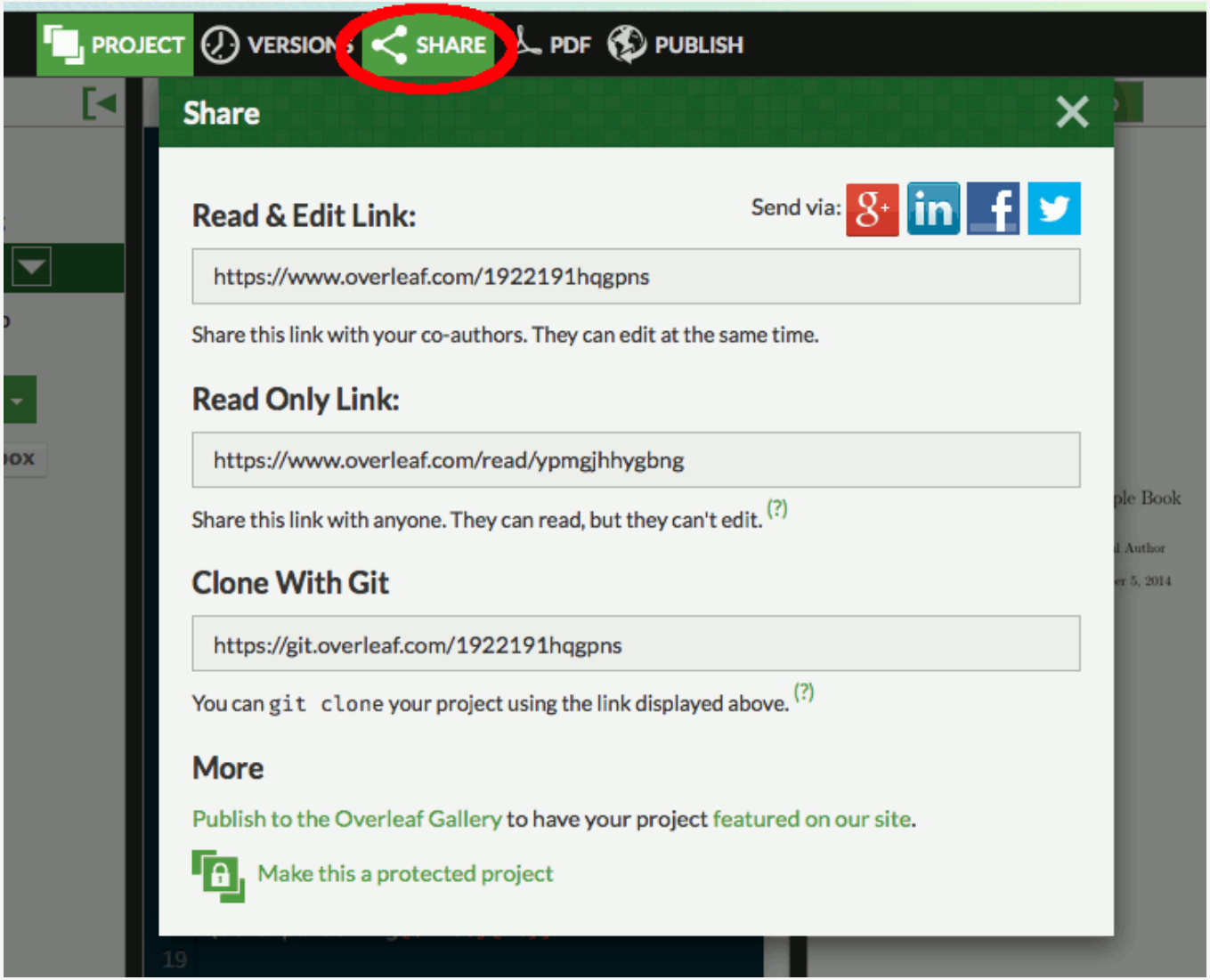
Importing your files from Plot.ly



Overleaf

Sync Offline Work with Git

Git link of your Overleaf Project



Clone the project to your local machine

- Clone the project to your local machine

```
$  git clone https://git.overleaf.com/192219hqgpns my_paper
```

- Make edits on your local machine
- Commit local changes

```
$  git add *.tex *.png
$  git commit -m "Added new section and images"
```

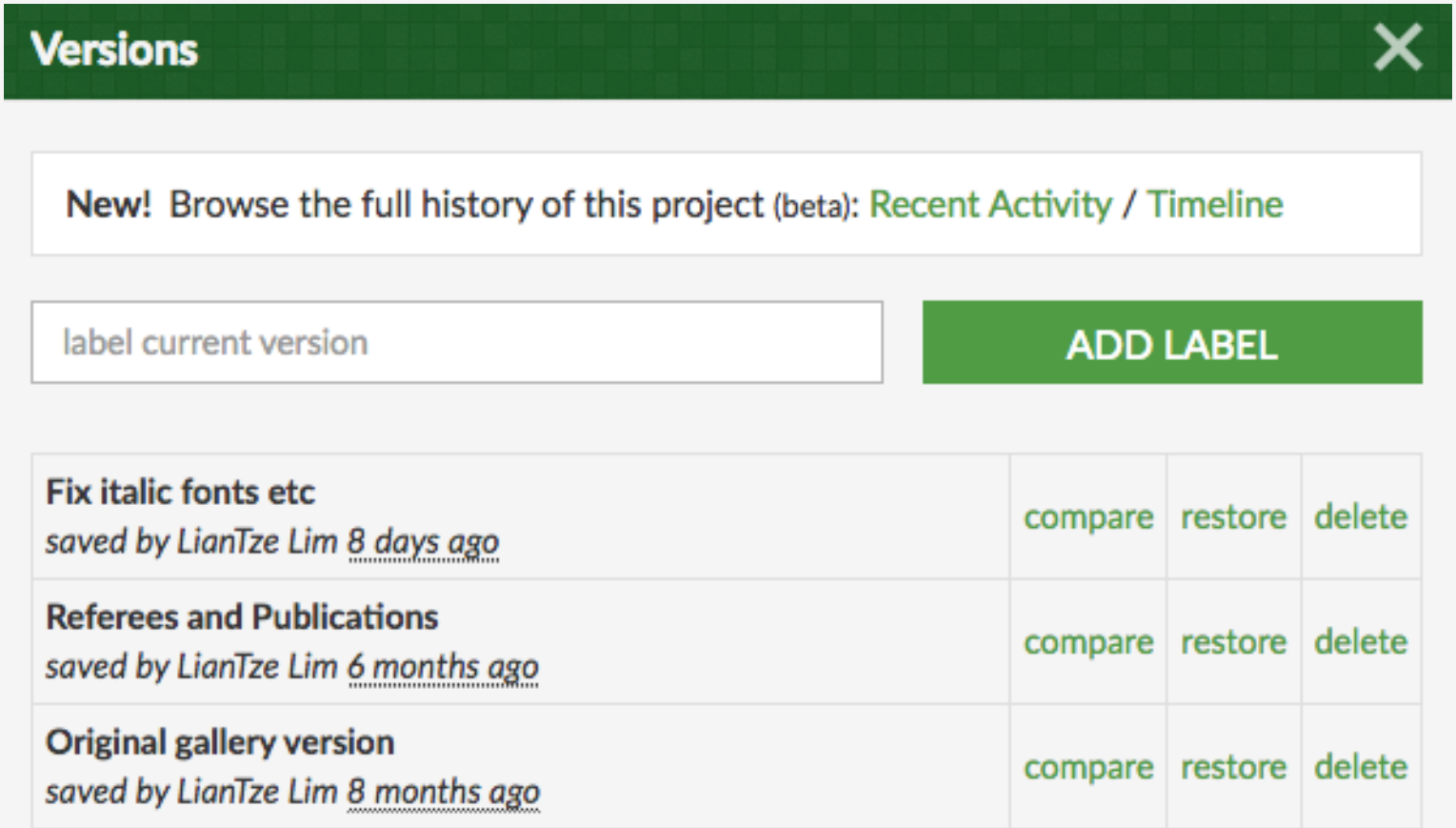
- Push changes to Overleaf project

```
$  git push origin master
```

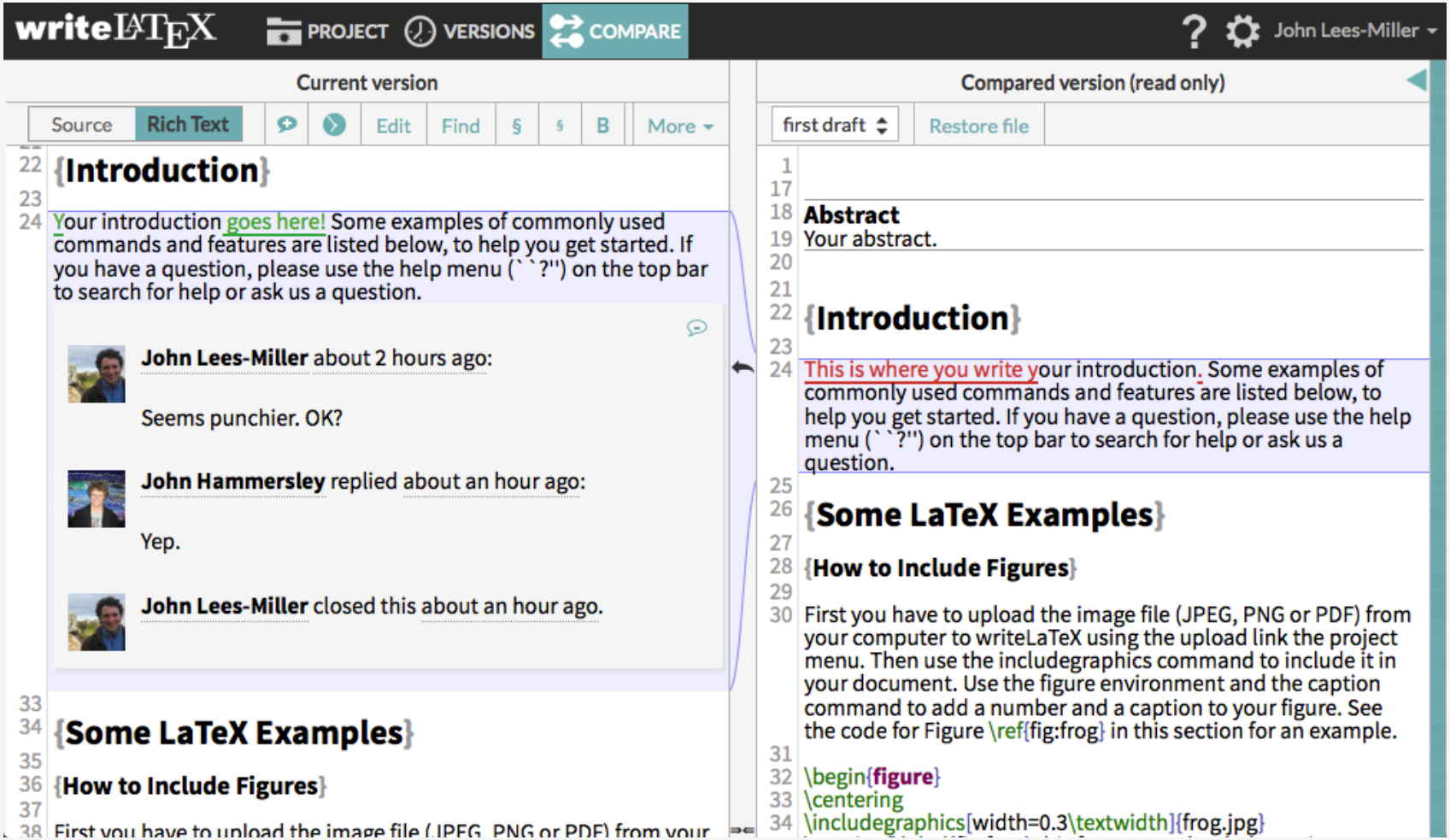
Overleaf

Saving Versions & Accessing Full History

Save versions of your work



Inline comments and track changes for Review



Full history (beta)

Pro & Pro+ Users

LianTze Lim

5 hours ago

Edited igs2eannalsguide.tex: view source

```
...
\bibliographystyle{igs}  % imposes IGS bibliography style on output

% however, we are going to include igs2eannalsguide.bbl here:

% \begin{thebibliography}{16}
% \providecommand{\natexlab}[1]{#1}
...
\appendix
\section{Appendix}
...
```

LianTze Lim

5 hours ago

Edited igs2eannalsguide.tex: view source

```
...
\end{figure*}

% \subsubsection{Manual references}
% References should be complete and conform to the IGS reference style. Particular points to note are that author names...
\section{Acknowledgements}
We would like to thank Jason Amundson, Ed Bueler, Andrew Clifton, Gwenn~Flowers, Ralf Greve and Doug MacAyeal for their constructive...
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Edited igs2eannalsguide.tex: view source

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...
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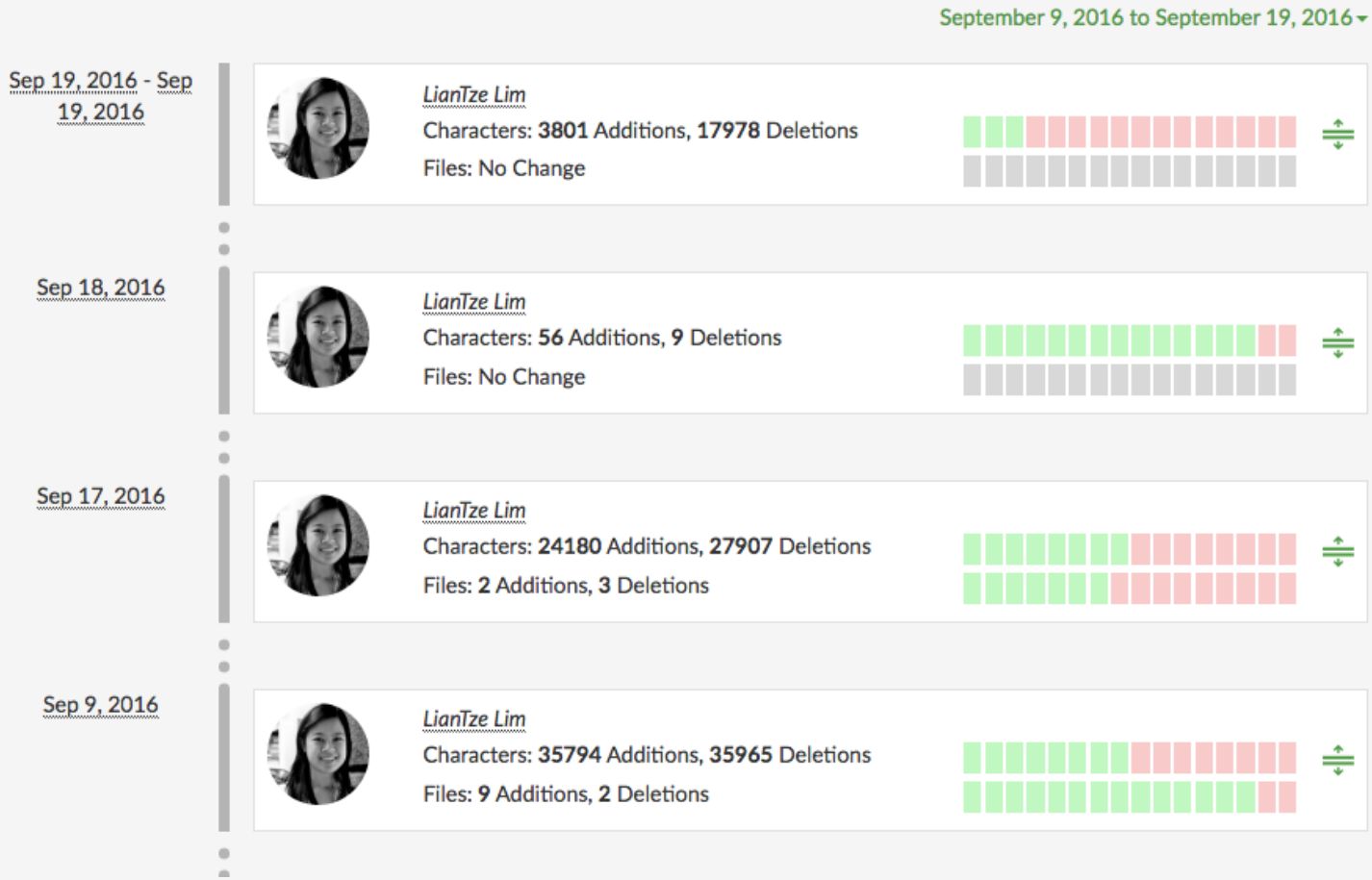
Timeline View (beta)

Pro & Pro+ Users



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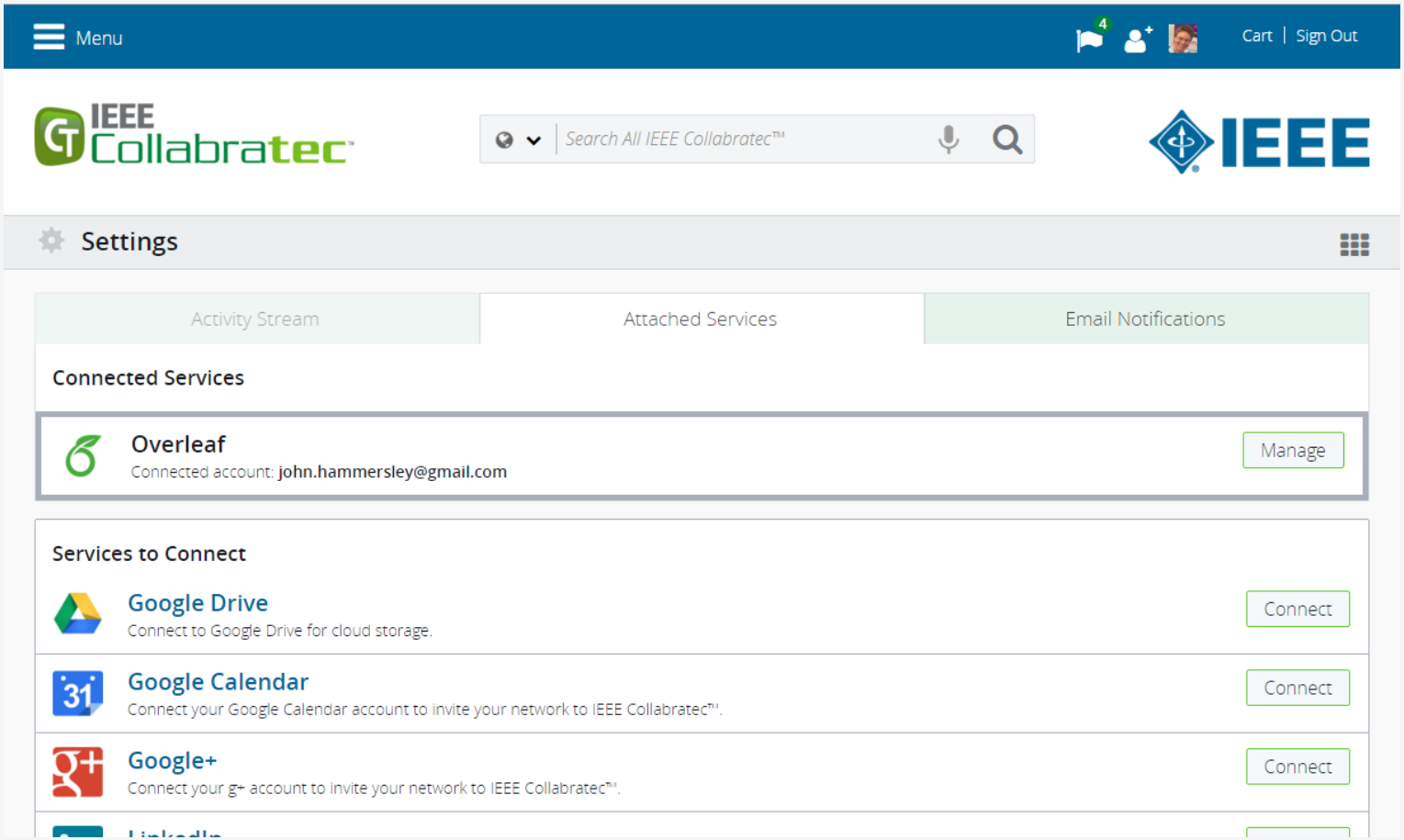
Integration with IEEE Collaboratec



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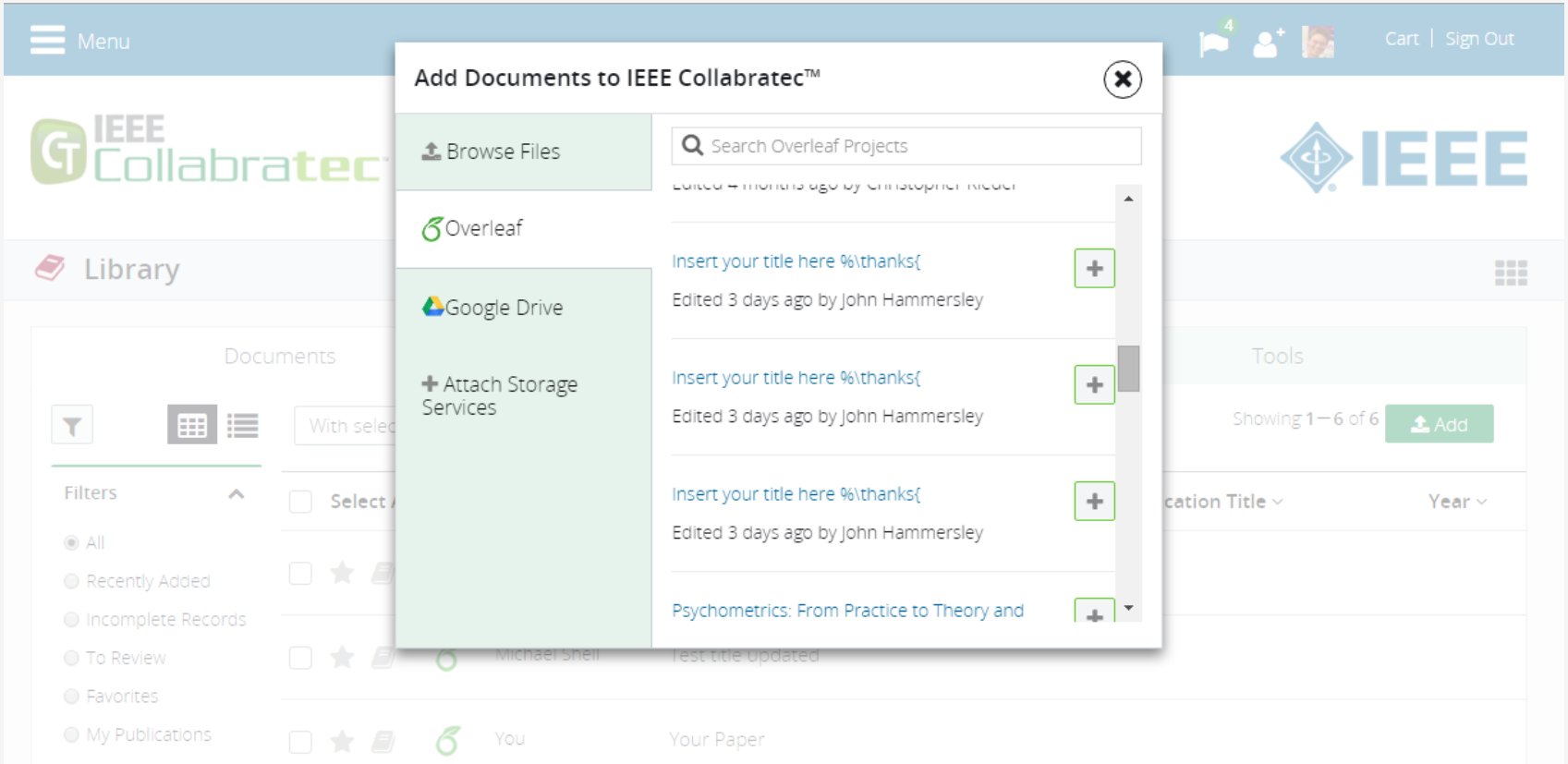

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More resources

- Overleaf's online interactive LaTeX tutorial
- The LaTeX Font Catalogue
- Using TTF/OTF fonts on Overleaf with XeLaTeX
- Overleaf keyboard shortcuts
- Synchronising an Overleaf project with a Github repo
- Backup Overleaf to Dropbox to BitBucket with Git
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Thank you!

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Спасибо
Thank you
நன்றி
Teşekkür ederim
ขอบคุณ
Xin cảm ơn
Gracias
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Merçi
شكرا
Go raibh maith agaibh
Tapadh leibh
ཐུགས་རྗེ་ཆེ།