There's an App for That

Collaborative Publishing with Overleaf

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How can our users streamline the writing, editing and publishing of their scientific documents? Traditional tools such as Microsoft Word Online or Google Docs have been used for some time now in multidisciplinary collaborative writing. But challenges such as format compatibility mean that scientists and engineers have continued to turn to specialized programming languages such as LaTeX, which have been developed to address the particular needs of writing in sciences. Tools such as Overleaf are empowering scientific collaborative writing and publication by offering both LaTeX and a more user-friendly Rich Text mode in one enhanced, cloud-based platform.

Evolution & Features

Launched in 2012, Overleaf was created to make the whole process of academic collaboration easier and more effective. Overleaf is supported by Digital Science, a company that provides technology support for full cycle research. Digital Science's portfolio includes many other applications including Altmetric, Labguru, figshare and ReadCube (Overleaf 2018). In July 2017, ShareLaTeX, an open source LaTeX editor, merged with Overleaf. The ShareLaTeX editor was conceived as the core of the new platform (Hammersley et al. 2017).

Overleaf has a version control feature convenient for working with other authors, and users can push and pull changes from the cloud as needed. The product offers both free and paid plans. Both versions easily embed World Wide Web downloadable LaTeX source, the academic communication and publication markup program popularly used in mathematics and many areas of science and engineering. The option of using Rich Text mode is a great feature. With the same full functionality as LaTeX, Rich Text is more human-readable, and offers a user-friendly interface.

A number of optional software packages and extensions simplify difficult and repetitive tasks. Overleaf includes journal-specific template development, pre-submission checks and links to journals' submission systems (Figure 1, Figure 2). Users can enjoy one-click submission links to many academic publishers, such as AMS, ASCE and ACM, as well as repositories such as arXiv and figshare, and some integrations such as IEEE Collabratec. The paid plan has larger storage and linkage to Dropbox, among several prime features.
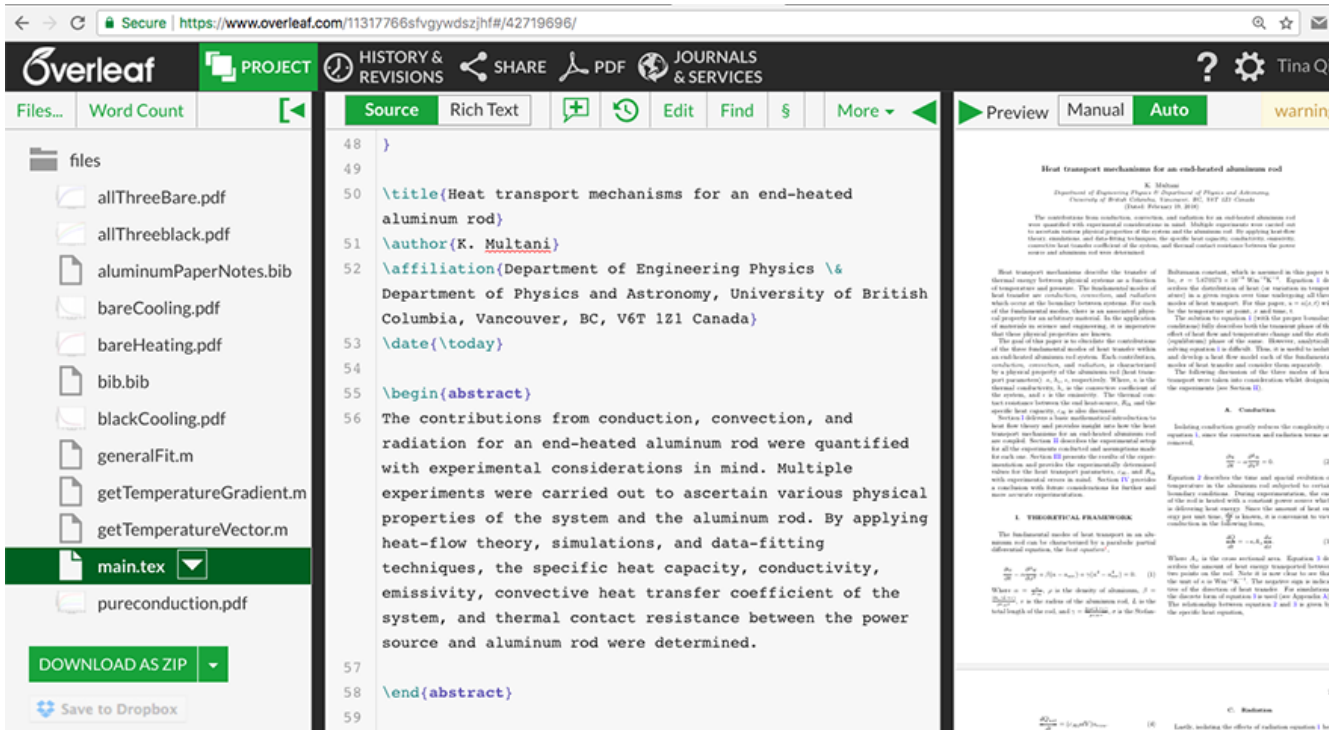
Figure 1: Overleaf writing interface. From left to right, these elements are project file management area, LaTeX source/ Rich Text and preview in PDF.
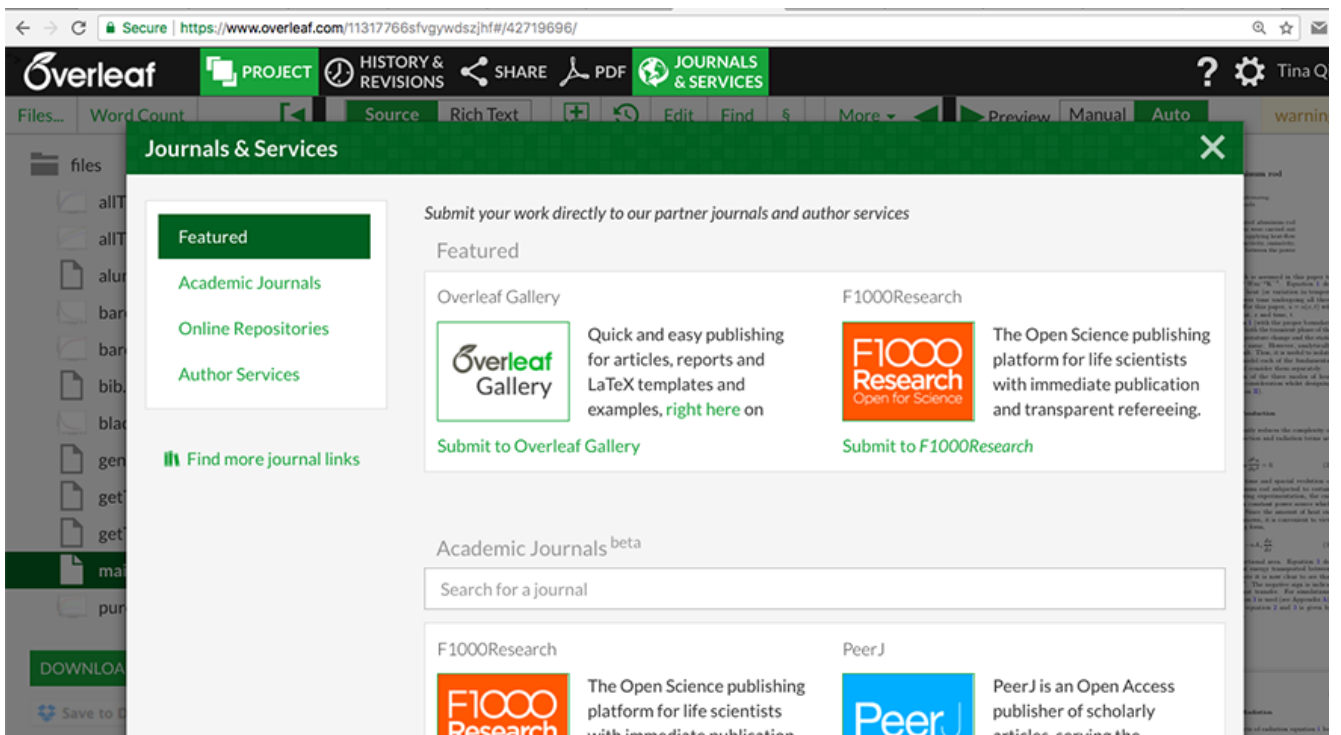

Figure 2: Overleaf's Journals and Services interface. One-click submission features Academic Journals, Online Repositories and Author Service.

Campus adoption

A growing list of universities have adopted site licenses, called Overleaf Commons. Overleaf Pro+Teach provides accounts to students, faculty and staff, as well as a custom Overleaf portal. Stanford and Caltech are two examples. Overleaf provides a teaching Toolkit, user support, and data and analytics on institutional use. Overleaf's institutional accounts also support upload of thesis, journal, and university-specific templates, or development of other custom templates.

University libraries often provide support for campus-wide Overleaf use. Purdue University Libraries, for example, offer an information page for LaTeX and BibTeX that includes citation management linked to LaTeX. Purdue's graduate school also improves thesis authoring and submission processes by using customized Overleaf templates. During the

trial year around 2016, 35% of all STEM theses at Purdue used the Purdue Overleaf thesis template. "By taking out the need to deal with formatting and composition issues, this took the number of meetings between [Purdue] students and Graduate School staff from an average of 5 or more meetings, down to 2-3 meetings. That's an average of 980 meetings cut!" (Baynes 2017).

Pros and Cons

Overleaf has no lead author or owner for free accounts. In situations where a coordinating author is needed, users have to nominate someone and then plan the writing outside of Overleaf using e-mail. Meanwhile in the paid plan, project owners can control access to view or edit for each contributor (Morrison 2017). The versioning and edit history are essential for collaborative writing, however, the full project history is not available in the free plan. One of my favorite features is that Overleaf has unlimited projects and collaborators, even for the free plan.

Other Cloud Solutions

Authorea is a major competitor of Overleaf offering similar features. Both platforms allow for editing in Rich Text and LaTeX. Authorea offers online markdown editing as well as HTML and Javascript options. Overleaf has multiple pre-built templates to author different types of documents including posters, presentations, books, homework assignments, theses, resumes. etc. The free account on Authorea has limited use -- collaborators can only work on one private article and the rest of articles are publicly available to view. In the free account on Overleaf, authors are allowed to have 1 GB of storage space and 60 files per project.

References

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