TU Delft's JB Starterkit

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by

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This thesis is confidential and cannot be made public.

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Optional custom colophon text below the publication table.

Made with MyST and Typst using the JBOS MyST Typst template.

Abstract

In this demo, we demonstrate how Jupyter Book can be used to create and publish a content rich paper that includes interactive elements such as code cells, visualizations, and multimedia. We will walk through the process of setting up a Jupyter Book, adding content, and deploying the final product online.

Keywords: Jupyter Book, Open Science, TU Delft, Starterkit

Contents

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1. Use the starterkit

The instructions on this page guide you through the process of setting up your own thesis (repo) by creating a (new) GitHub repository using the starterkit template repository.

== Create a repository

We assume you have a GitHub account and are logged in. If not, please create an account and log in first. Follow these instruction to use the GitHub template repository to create your own thesis repository:

1.0.1 Step 1

1. Go to the use the starterkit template
2. Choose a proper name of your repository (this will be also part of your URL!) and leave visibility as `public`.
3. Click the green `Create repository` button, this will start copying all files to your newly created repository.

1.0.2 Step 2

4. You were directed to the main page of your repository, all files have been copied but the settings were not.
5. Click on

and in the left menu on

and change `source: Deploy from a branch` to `source: Github Actions`

1.0.3 Step 3

5. Click on

in the top left corner and click on ⚙️ (the `gear-icon` near **About**) at the right site of the page.

6. Check the box **Use your GitHub Pages website**.
7. Go to

in the top menu, click on (red) `initial commit` and click `re-run all jobs`

The book will now be deployed again - where now it can actually load GitHub pages! You are all set and done.

1.1 First step

You may want to start with opening the `authors.yml` file and specify your name, your institution and details of your supervisor.

Next, open the `myst.yml` file, change the title, the keywords, the date and the github url which is set to the original starterkit repo by default.

If you are from another university, you want to change the icons and logo's in the `style` folder, and redirect to these in the `myst.yml` file in the `site - options` section.

> **specify correct github repo**
>
> In using the template repo, some information that belongs to the original repo are copied as well. It is important to open the `myst.yml` file and set the github url to your own.

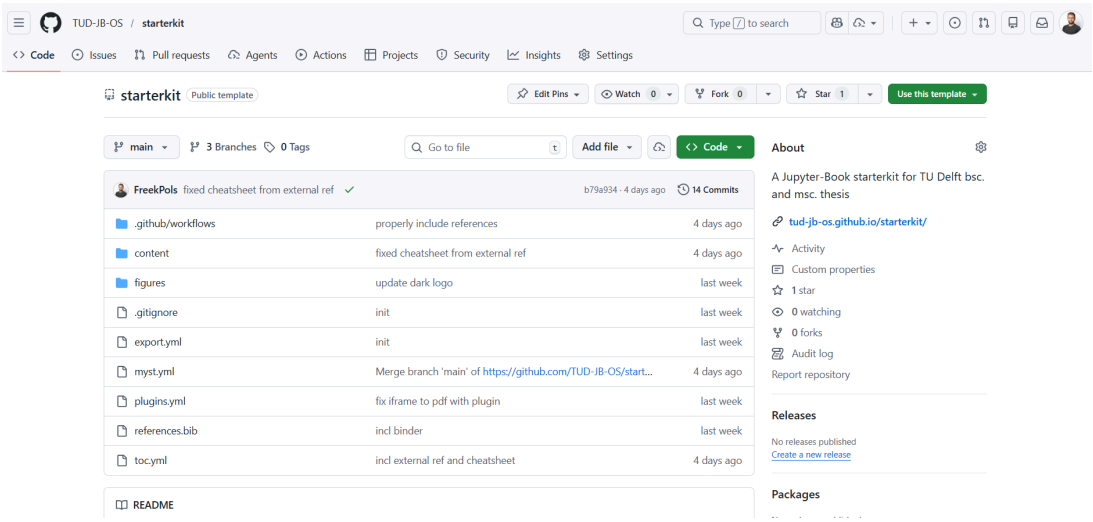
1.2 View your thesis online

The previous steps set up your repository with GitHub Pages using a GitHub Actions workflow. That action automatically builds your book (a website) and deploys it online. The URL of your book is based on your GitHub username:

`https://USERNAME.github.io/<reponame>`

You can also find the link easily from you GitHub repository home page under the "About" section on the right-hand side (illustrated in Figure 2).

You also have automatically two pdf's based on a LaTeX thesis and Typst thesis template. Two buttons can be found at the top right corner to inspect these pdf's.



1.3 Ready?

Ready to write your thesis? Comment out this page in the `toc.yml` file: `- file: content/Quickstart.md` and your thesis repo is set. You can edit the existing files and add new files.

Not familiar with GitHub, VSC, markdown and/or Jupyter Book? All necessary information is covered in our TUD guide to open publishing with JupyterBook. More information is also available in the official Jupyter Book documentation. For quick references, we included a cheatsheet. Problems with Typst output? See the automatically build errorlog.

2. Introduction

Jupyter Book has been rebuild from ground up using the MyST engine (Jupyter et al. 2025). This allows to export content in multiple output formats including HTML, PDF and docx. In this paper we present an overview of the possibilities and demonstrate its working.

In an introduction. you often cite. Than can be done in various ways, either using a .bib file or directly using the doi.

cite with doi

- `[@doi:10.25080/hwcj9957]` resulting in (Jupyter et al. 2025)
- `@doi:10.25080/hwcj9957` resulting in Jupyter et al. (2025)

cite from bib-file

- `{cite:t}`jupyter2025`` resulting in Jupyter et al. (2025)
- `{cite:p}`jupyter2025`` resulting in (Jupyter et al. 2025)

2.1 Background

Jupyter Book has been rebuild with the intend to export content in multiple output formats including HTML, PDF and docx. Figure 1 provides this idea.

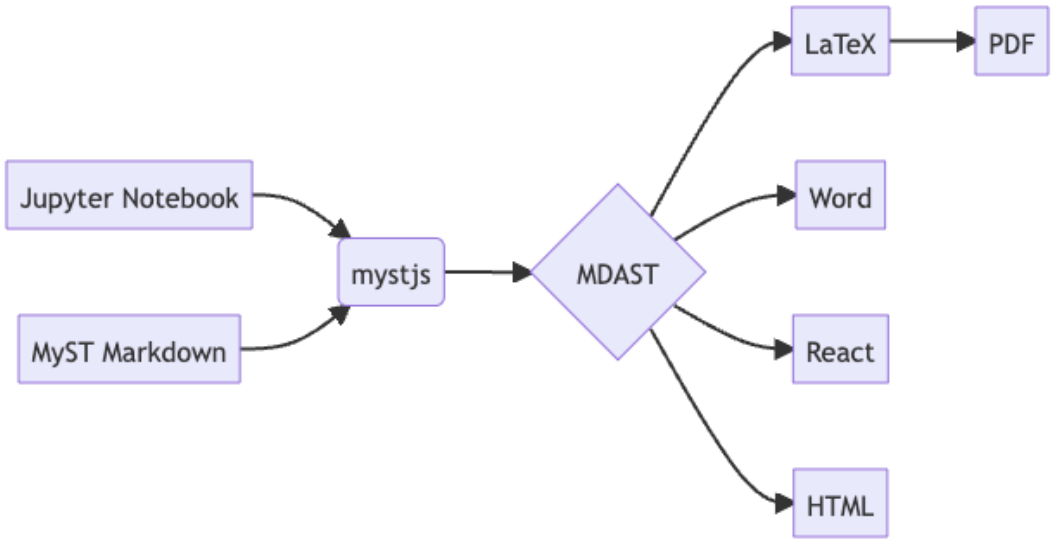


Figure 2.2: The myst engine allows Jupyter Notebook, markdown and even tex files to be converted to multiple output formats.

As exporting to different formats is possible, it is not always desired. Some content should only be visible in the HTML version, and some content only need to be included in the PDF version. You can use blocks like `+++{"no-pdf":true}` to enable this, as shown below where the figure is seen in the HTML version but not in the PDF version.

Moreover, sometimes you want to have content only showing up in the pdf, if you use Typst you can use of a block `+++{raw:typst}` and for LaTeX `+++{raw:latex}`.

3. Theory

We can have inline equations like $E = mc^2$ or display equations like:

$$\oint_C \phi \tag{3.1}$$

$$i\hbar\frac{\partial\psi}{\partial t} = -\frac{\hbar^2}{2m}\nabla^2\psi + V\psi \tag{3.2}$$

We can link to equations using their labels, like equation (2) or with more emphasis: eq 2. See the documentation for more options with using formulas. You might be interested in specific ways of numbering.

> **Tip**
>
> Check the hover-over functionality for these links!

4. Methods

In this project, a starterkit provides you a set of tools, templates and workflows to have a head start on your project. We follow the logic below (not in pdf):

The starterkit is copied to your own repository. With every commit to your repository, the website and pdf are updated. You may want to do some final tweaks to the final version of your pdf.

5. Results

With JupyterBook it is possible to make your narrative and data-analysis available in a single file, through Jupyter Notebooks. It is even possible to create interactive materials using widgets on the website, but leave them out in the PDF version (using tags). To run the code below, click the

icon in the top right corner. This will connect with a kernel. If the kernel is loaded, click

to run the code.

Figure 1 shows the results of fitting our linear model to the data. Parameter a is optimal when the chi-squared curve is at its minimum, which corresponds to the smallest residuals and the best match between model and data.

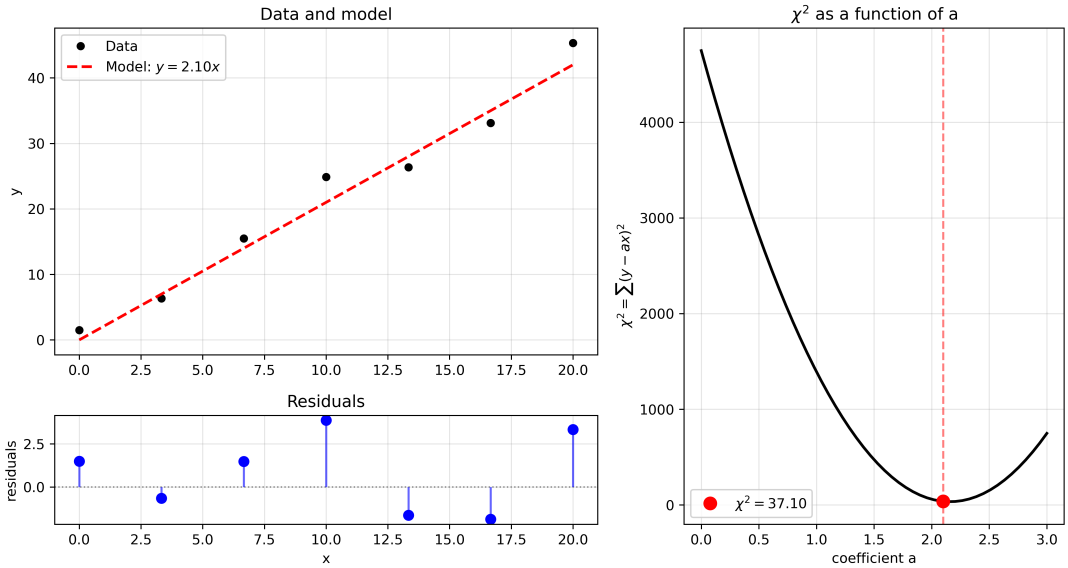


Figure 5.3: Fitting our data to a linear model with a single parameter a. The optimal value of a is found when the chi-squared curve (bottom) is at its minimum. The residuals (top right) are smallest at this point, and the model (top left) best matches the data.

6. Conclusion

In this study we investigated whether and how scientific publishing is feasible through the use of Jupyter Book. Using a starterkit template repository which can be easily accessed and used, a head start is provided. The manual provides detailed information to make more technical elements accessible. Hence, we conclude that Jupyter Book provides a feasible way of publishing scientific content - at least for bachelor and master thesis.

7. Appendix

7.1 Cheatsheet

7.2 README

This is the TU Delft starterkit for open publishing with Jupyter Book. It provides a skeleton with basic settings to have a head start with your thesis / project.

It includes:

- a github deploy file taking care of deploying the website and building a pdf
- basic content files that can be altered to fit your project
- yml files in the root folder to configure the book and the pdf build

7.2.1 🕵️ Where to start

Already know about Jupyter Book, familiar with GitHub or GitLab, Markdown… start with cloning the starterkit and start writing working on your project. New to the ecosystem? Start with the manual, and then move on to the starterkit.

7.2.2 🏁 Purpose

The purpose of this project and this manual is to enable others to use Jupyter Book for writing and publishing their own scientific and educational content. We hope to lower the technical barrier for researchers and educators to create and share their own resources, and to promote open science and open education practices.

7.2.3 📄 License

7.2.4 ❌ Errors

If you find any errors in the content, please report them by opening an issue on the GitHub repository.

7.2.5 💰 Funding

This project has received funding from the Delft University of Technology Open Science Fund (2025-2026).

7.2.6 ⭐ Identifier

TUDJBOSSTARTERKIT

Bibliography

Jupyter, Project, Evan Bolyen, J Gregory Caporaso, et al. 2025. “Jupyter Book 2 and the MyST Document Stack.” *Python in Science Conference, 2025*, ahead of print,. https://doi.org/10.25080/hwcj9957.