The LaTeX template generator

Oliver Kopp

Agenda

1. Motivation
2. User Experience
3. Developer Experience

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1. **Motivation**
2. **User Experience**
3. **Developer Experience**

IEEE Template

Simplified IEEE Template

> Quick start for modern LaTeXing for an IEEE conference, based on the Manuscript Template for Conference Proceedings.

The official template is distributed via CTAN as the IEEEtran package, which is actively maintained. However, de-facto configurations (hyperref) and modern features of latex (microtype) are not configured. This page does it.

Features

- Provides skeletal paper-conference.tex and paper-conference-compsoc.tex files.
- Generated PDF allows for copy and paste of text without getting words with ligatures such as "workflow" destroyed. This is enabled by the cmap package, which encodes ligatures (such as fl) using unicode characters.
- Support of hyperlinked references without extra color thanx to hyperref.
- Better breaking of long URLs.
- Support for `\powerset` command.
- Support todos as pdf annotations. This is enabled by the pdfcomment package.
- microtypographic extensions for a better look of the paper.
- Adds modern packages such as microtype, cleveref, csquotes, booktabs, paralist, hyperref, hypcap, upquote.
- Shows how IEEE copyright notice can be added.
- Optional: Support for minted package. Prepared in `paper-conference-minted.tex`.
- Ready-to-go configuration for latexindent.

https://latextemplates.github.io/IEEE/

LNCS Template

Simplified LNCS Template

circleci passing

> Quick start for modern LaTeXing with LNCS.

Features

- Support for German documents (without broken headers): Contains a fix to increase compatibility with Babel. See https://tex.stackexchange.com/a/441701/9075 for details.
- Provides a skeletal paper.tex file.
- Generated PDF allows for copy and paste of text without getting words with ligatures such as “workflow” destroyed. This is enabled by `glyphtounicode`, which encodes ligatures (such as fl) using unicode characters.
- Automatic setting of “Fig.” and “Section”/”Sect.” according to the LNCS style. Just use `\Cref{sec:xy}` at the beginning of a sentence and `\cref{sec:xy}` in the middle of a sentence. Thanx to cleveref.
- Support of hyperlinked references without extra color thanx to hyperref.
- Better breaking of long URLs.
- Sharper font (still compatible with Springer’s requirements).
- Support for `\powerset` command.
- Support todos as pdf annotations. This is enabled by the pdfcomment package.
- microtypographic extensions for a better look of the paper.
- Adds modern packages such as microtype, cleveref, csquotes, paralist, hyperref, hypcap, upquote, natbib, booktabs, cfr-lm.
- Optional: Support for minted package. Uncomment `\usepackage[newfloat]{minted}` to get started.
- Optional: Compile with `lualatex` instead of `pdflatex`.
- Ready-to-go configuration for latexindent.

https://latextemplates.github.io/LNCS/

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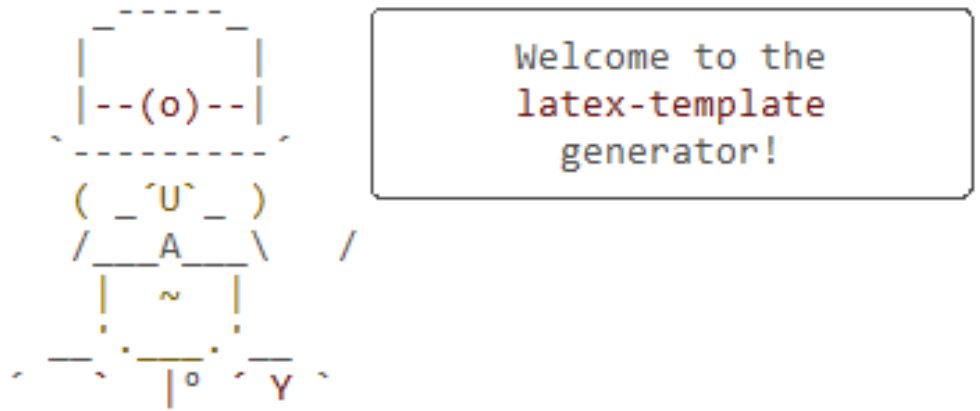
User Experience: Installing and Starting the Generator

- `npm install -g yo generator-latex-template`
- `$ yo latex-template`




```
? Which template should be generated?
  Scientic Thesis
  Association for Computing Machinery (ACM)
> Institute of Electrical and Electronics Engineers (IEEE)
  Springer's Lecture Notes in Computer Science (LNCS)
```

```
$ npx yo c:\git-repositories\latextemplates\generator-latex-template

     _-----_
    |       |
    |--(o)--|      .--------------------------.
   `---------´     |    Welcome to the        |
    ( _´U`_ )      |    latex-template        |
    /___A___\   /  |      generator!          |
     |  ~  |       '--------------------------'
   __'.___.'__
 ´   `  |° ´ Y `

? Which template should be generated? Institute of Electrical and Electronics Engineers (IEEE)
? Which variant of IEEE paper? conference paper
? Which paper size to use? A4
? Overleaf compatibility? yes
? Which TeXLive compatibility? TeXLive 2023
? Should a Dockerfile be generated? yes (Reiztig)
? Which language should the document be? English
? Which package to typeset listings? minted (requires a working Python installation)
? Which package to use to "enquote" text? csquotes (\enquote{...} command)
? Enable hyphenation tweak (e.g., application"=specific for app-lication-specific at a linebreak) or enable easy quotation (e.g
 "application"; not common in default latex setups)? Hyphenation tweak
? Which package to mark TODOs? pdfcomment
? Include hints on text (e.g., how to write an abstract)? Yes
? Include minimal LaTeX examples? Yes
```

```
$ npx yo c:\git-repositories\latextemplates\generator-latex-template

     _-----_
    |       |
    |--(o)--|      .--------------------------.
   `---------´     |    Welcome to the        |
    ( _´U`_ )      |    latex-template        |
    /___A___\   /  |      generator!          |
     |  ~  |       '--------------------------'
   __'.___.'__
 ´   `  |° ´ Y `

? Which template should be generated? Institute of Electrical and Electronics Engineers (IEEE)
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? Overleaf compatibility? yes
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 "application"; not common in default latex setups)? Hyphenation tweak
? Which package to mark TODOs? pdfcomment
? Include hints on text (e.g., how to write an abstract)? Yes
? Include minimal LaTeX examples? Yes
   create .gitignore
   create .editorconfig
   create paper.bib
   create _latexmkrc
   create localSettings.yaml
   create LICENSE
   create Makefile
   create paper.tex
   create README.md
   create .dockerignore
   create Dockerfile
   create Texlivefile
   create .github\workflows\check.yml

No change to package.json was detected. No package manager install will be executed.
```

Quick start for LaTeXing with IEEEtran.cls for IEEE Computer Society Conferences

First Author, Second Author
University of Examples, Germany
{lastname}@example.org

Third Author
School of Electrical and
Computer Examples
Georgia Institute of Examples
Atlanta, Georgia 30332–0250
http://www.example.org

***Abstract*—Write an abstract for your work. Replace each of the points below with one sentence (two if you must) and you have your abstract. Write it when you finished your entire report.**[1]

Introduction. **In one sentence, what's the topic? Phrase it in a way that your reader will understand. If you're writing a PhD thesis, your readers are the examiners – assume they are familiar with the general field of research, so you need to tell them specifically what topic your thesis addresses. Same advice works for scientific papers – the readers are the peer reviewers, and eventually others in your field interested in your research, so again they know the background work, but want to know specifically what topic your paper covers.**

State the problem you tackle. **What's the key research question? Again, in one sentence. (Note: For a more general essay, I'd adjust this slightly to state the central question that you want to address) Remember, your first sentence introduced the overall topic, so now you can build on that, and focus on one key question within that topic. If you can't summarize your thesis/paper/essay in one key question, then you don't yet understand what you're trying to write about. Keep working at this step until you have a single, concise (and understandable) question.**

Summarize (in one sentence) why nobody else has adequately answered the research question yet. **For a PhD thesis, you'll have an entire chapter, covering what's been done previously in the literature. Here you have to boil that down to one sentence. But 'abstract' means a summary of the main ideas with most of the detail left out. So feel free to omit detail! (For those of you who got this far and are still insisting on writing an essay rather than signing up for a PhD, this sentence is really an elaboration of sentence 4 – explore the consequences of your new perspective).**

As a single sentence, what's the key impact of your research? Here we're not looking for the outcome of an experiment. **We're looking for a summary of the implications. What's it all mean? Why should other people care? What can they do with your research. (Essay folks: all the same questions apply: what conclusions did you draw, and why would anyone care about them?)**

I. Introduction

Purpose and scope of your entire report. The purpose of your entire report is to make a *scientific argument using the scientific method*. A scientific argument always has the following steps that all must come in this order.

SM1 *Explicate the assumptions and state of the art* on which you are going to conduct your research to investigate your research problem/test the hypothesis.

SM2 Clearly and precisely *formulate a research problem or hypothesis*.

VII. LaTeX Hints

This section contains hints on writing LaTeX. It focuses on minimal examples, which can be directly adapted to the content

A. Handling of paragraphs

One sentence per line. This rule is important for the usage of version control systems. A new line is generated with a blank line. As you would do in Word: New paragraphs are generated by pressing enter. In LaTeX, this does not lead to a new paragraph as LaTeX joins subsequent lines. In case you want a new paragraph, just press enter twice (!). This leads to an empty line. In word, there is the functionality to press shift and enter. This leads to a hard line break. The text starts at the beginning of a new line. In LaTeX, you can do that by using two backslashes (\\).
This is rarely used.

Please do *not* use two backslashes for new paragraphs. For instance, this sentence belongs to the same paragraph, whereas the last one started a new one. A long motivation for that is provided at http://loopspace.mathforge.org/HowDidIDoThat/TeX/VCS/#section.3.

Corresponding LaTeX code of `paper.tex`

```
One sentence per line.
This rule is important for the usage of version control
↪ systems.
A new line is generated with a blank line.
As you would do in Word:
New paragraphs are generated by pressing enter.
In LaTeX, this does not lead to a new paragraph as LaTeX joins
↪ subsequent lines.
In case you want a new paragraph, just press enter twice (!).
This leads to an empty line.
In word, there is the functionality to press shift and enter.
This leads to a hard line break.
The text starts at the beginning of a new line.
In LaTeX, you can do that by using two backslashes
↪ (\textbackslash\textbackslash).\\
This is rarely used.

Please do \textit{not} use two backslashes for new paragraphs.
For instance, this sentence belongs to the same paragraph,
↪ whereas the last one started a new one.
A long motivation for that is provided at \url{http://
↪ loopspace.mathforge.org/HowDidIDoThat/TeX/VCS/#section.3}.
```

D. Typesetting Units

Numbers can written plain text (such as 100), by using the siunitx package like that: $100\,\frac{\mathrm{km}}{\mathrm{h}}$, or by using plain LaTeX (and math mode): $100\,\frac{km}{h}$.

Corresponding LaTeX code of `paper.tex`

```
Numbers can written plain text (such as 100), by using the
↪ siunitx package like that:
\SI{100}{\km\per\hour},
or by using plain \LaTeX{} (and math mode):
$100 \frac{\mathit{km}}{h}$.
```

$5\,\%$ of $10\,\mathrm{kg}$

Corresponding LaTeX code of `paper.tex`

```
\SI{5}{\percent} of \SI{10}{kg}
```

Numbers are automatically grouped: $123\,456$.

Corresponding LaTeX code of `paper.tex`

```
Numbers are automatically grouped: \num{123456}.
```

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main.en.tex

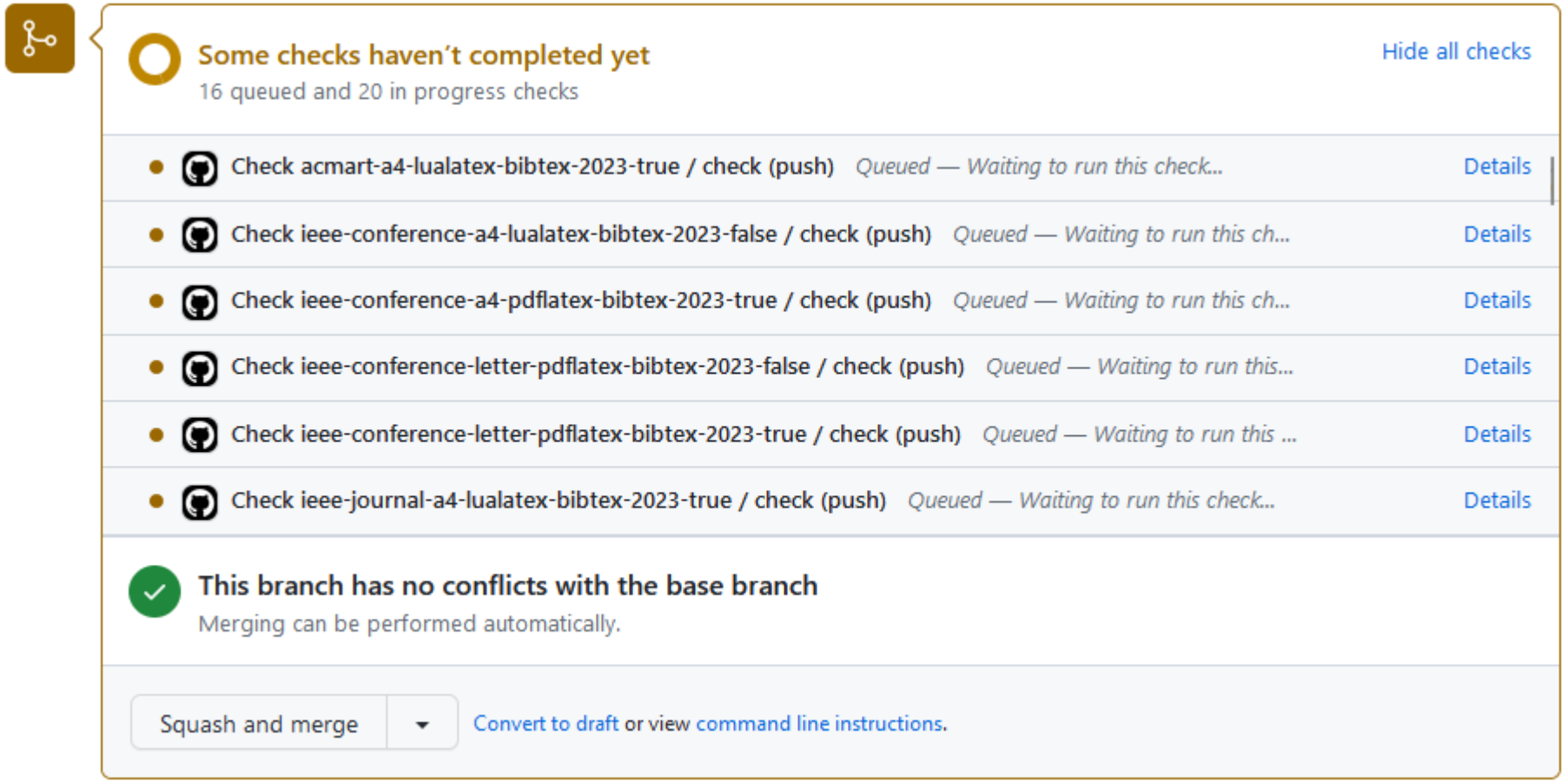
```
5   % This template has been tested with LLNCS DOCUMENT CLASS -- version 2.21 (12-Jan-2022)
6
7   <% break; case "ieee": -%>
8   % This template has been tested with IEEEtran of 2015.
9
10  <% break; } -%>
11  % !TeX spellcheck = en-US
12  % LTeX: language=en-US
13  % !TeX encoding = utf8
14  % !TeX program = <%= latexcompiler %>
15  <% if (requiresShellEscape) { -%>
16  % !TeX TXS-program:compile = txs:///<%= latexcompiler %>/[--shell-escape]
17  <% } -%>
18  % !BIB program = <%= bibtextool %>
19  % -*- coding:utf-8 mod:LaTeX -*-
20  <% switch (documentclass) { case "lncs": -%>


46  <% break; case "ieee": -%>
47
48  % DO NOT DOWNLOAD IEEEtran.cls - Use the one of your LaTeX distribution
49  % For the final version, replace "draftcls" by "final"
50  \documentclass[<%= ieee_variant %>,<%= papersize %>paper,english]{IEEEtran}[2015/08/26]


163 <%- include('siunitx.preamble.en.tex'); %>
```

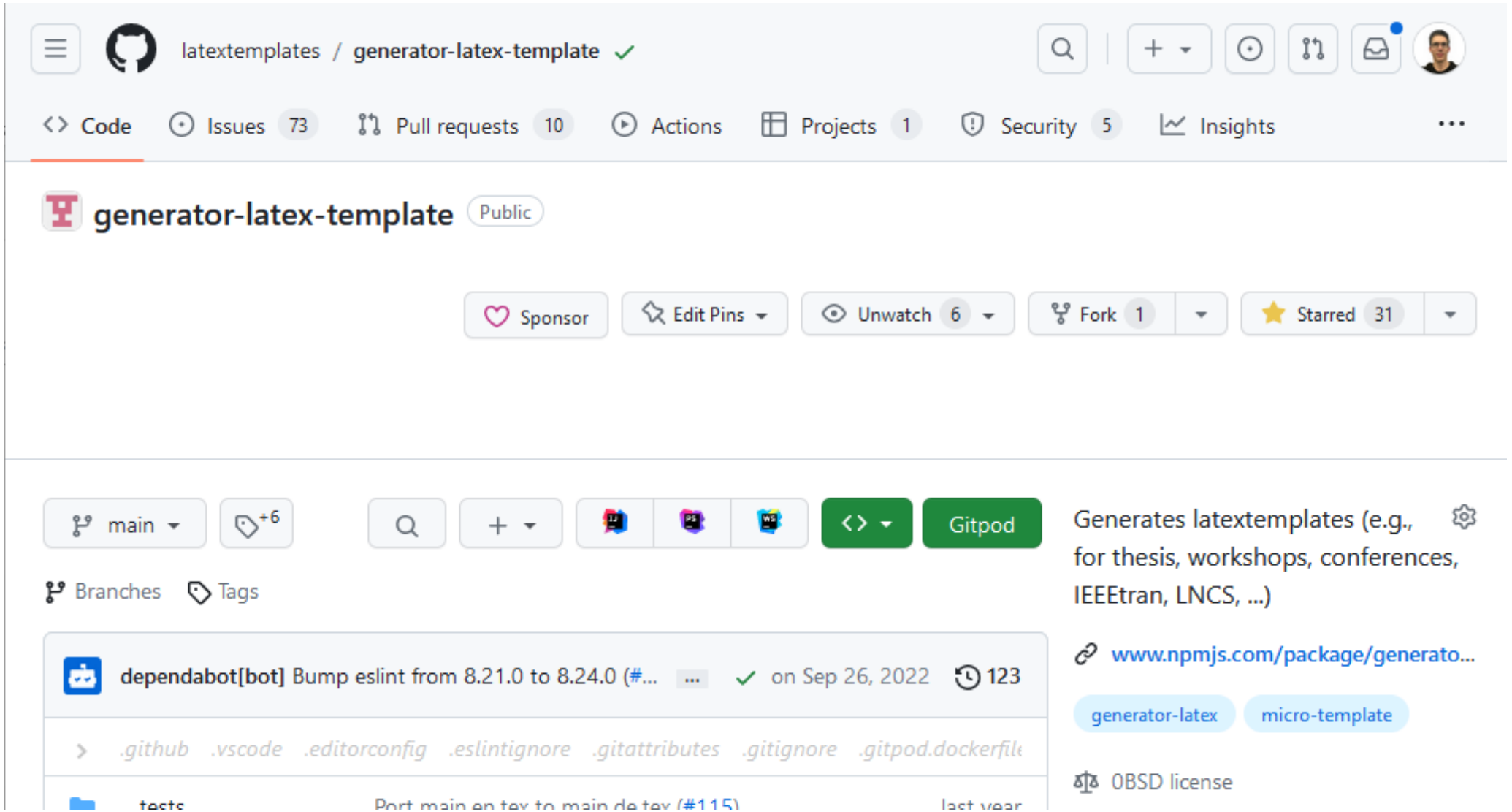
siunitx.preamble.en.tex and siunitx.example.en.tex

```
\usepackage[group-minimum-digits=4,per-mode=fraction]{siunitx}
```

```
<%= heading2 %>{Typesetting Units}

<%- bexample %>
Numbers can written plain text (such as 100), by using the siunitx package like that:
\SI{100}{\km\per\hour},
or by using plain \LaTeX{} (and math mode):
$100 \frac{\mathit{km}}{h}$.
<%- eexample %>

<%- bexample %>
\SI{5}{\percent} of \SI{10}{kg}
<%- eexample %>

<%- bexample %>
Numbers are automatically grouped: \num{123456}.
<%- eexample %>
```

Automatic CI Check on GitHub




latextemplates / generator-latex-template
Code
Issues 73
Pull requests 10
Actions
Projects 1
Security 5
Insights
generator-latex-template
Public
Sponsor
Edit Pins
Unwatch 6
Fork 1
Starred 31
main
+6
Gitpod
Branches
Tags
dependabot[bot] Bump eslint from 8.21.0 to 8.24.0 (#...
on Sep 26, 2022
123
.github .vscode .editorconfig .eslintignore .gitattributes .gitignore .gitpod.dockerfile
tests
Port main.en.tex to main.de.tex (#115)
last year
Generates latextemplates (e.g., for thesis, workshops, conferences, IEEEtran, LNCS, ...)
www.npmjs.com/package/generato...
generator-latex
micro-template
0BSD license