

The Island of T_EX 2023

Sailing the smooth seas of ideas

Island of T_EX

July 16, 2023

TUG 2023



Ich heiÙe Paulo!



Pringles-powered
Brazilian bloke



Computer Science
theoretician



Rubber duck
enthusiast



Ich heiÙe Paulo!



Core team member
(Island of T_EX)



Community Outreach
Coordinator (Overleaf)



We always valued community
over development pace



New release
of albatross



Community
website



Improved
Docker builds



Dedicated area
for \TeX packages



New experts
and contributors



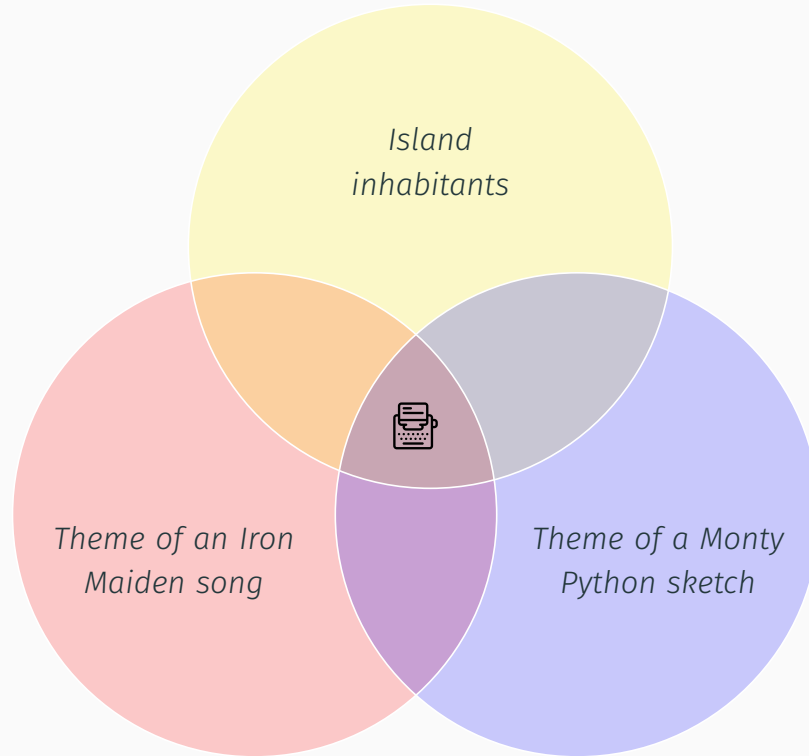
Exciting ideas
for the future



Command line tool for finding fonts
that contain a given Unicode glyph



<https://gitlab.com/islandoftex/albatross>





New features in this release



Redesigned
border styles



Font lookup
in the \TeX tree



Grapheme
support



Examples

BASH

```
# Include fonts from the TeX tree  
# (font indexing might take a while)  
$ albatross --include-tex-fonts 0xDF
```

```
# Subsequent calls are faster, as  
# albatross will use a font cache  
$ albatross --include-tex-fonts 0xDF
```

```
# Include fonts and rebuild font cache  
$ albatross --include-tex-fonts --clear-cache 0xDF
```



Glyph
itself

β



Hexadecimal
notation

$\text{o}x\text{DF}$



Multiset
union

$\text{U}+\text{DF}$



A grapheme is a sequence of one or more code points that are displayed as a single, graphical unit that a reader recognizes as a single element of the writing system

ä



Legacy, single
code point



Base character
+ diaeresis



Examples

```
# Since Ÿ is composed of two code points, albatross will  
# query all fonts that have both U+79 and U+306  
$ albatross Ÿ
```

BASH

```
# Should yield the same results, as albatross takes a conjunctive  
# approach and will look for fonts that contain all elements  
$ albatross U+79 U+306
```



Woman construction worker,
medium-light skin tone

1

Construction
worker

2

Medium-light
skin tone

3

Zero width
joiner

4

Female
sign



Examples

BASH

```
# The tool will query all fonts that have U+1F477,  
# U+1F3FC, U+200D, U+2640, and U+FE0F – all code  
# points that represent this emoji ZWJ sequence  
$ albatross 🧑‍🚒
```

```
# Should yield the same results  
$ albatross U+1F477 U+1F3FC U+200D U+2640 U+FE0F
```




This project is meant to present
our community to the wider public



<https://islandoftex.gitlab.io>



Write our
journal entries



Collect our
publications



Inspire and engage
new contributors



The Island of TeX Community Publications Blog

Search docs... [7] [m] [u]

The Island of TeX

The Island of TeX is a warm and welcoming place for TeX-related projects.

arara

Compile your documents in a breeze.

arara is a TeX automation tool based on rules and directives. It gives you a way to enhance your TeX experience. The tool is an effort to provide a concise way to automate the daily TeX workflow for users and also package writers. Users might write their own rules when the provided ones do not suffice.

[Project page](#) [Source code](#)

albatross

Find your favorite unicode characters in fonts.

Albatross is a command line tool for finding fonts that contain a given Unicode glyph. It relies on Fontconfig, a library for configuring and customizing font access. The tool takes a list of glyphs as input (three formats are supported). It is worth noting that the tool also provides proper grapheme support.

[Project page](#) [Source code](#)

texdoc-online

Power documentation search like [texdoc.org](#).

TeXdoc online is an online TeX and LaTeX documentation lookup system. It provides a RESTful API and a self-updating Docker container. The package documentation lookup relies on the Island's TeXdoc API. For topic and package listings, as well as recommendations, the system relies on the CTAN JSON API.

[Project page](#) [Source code](#)

checkcites

Detect undefined and/or unused references.

checkcites is a command line tool written for the sole purpose of detecting undefined and/or unused references from both LaTeX auxiliary or bibliography files. The tool currently supports both `latex` and `xypdf` backends and uses the generated auxiliary files to start the analysis.

[Project page](#) [Source code](#)

TeXplate

Create flexible TeX templates.

TeXplate is a tool for creating document structures based on templates. One can easily extrapolate the use beyond articles and theses: the tool is powerful enough to generate any text-based structure, given that a corresponding template exists.

[Project page](#) [Source code](#)

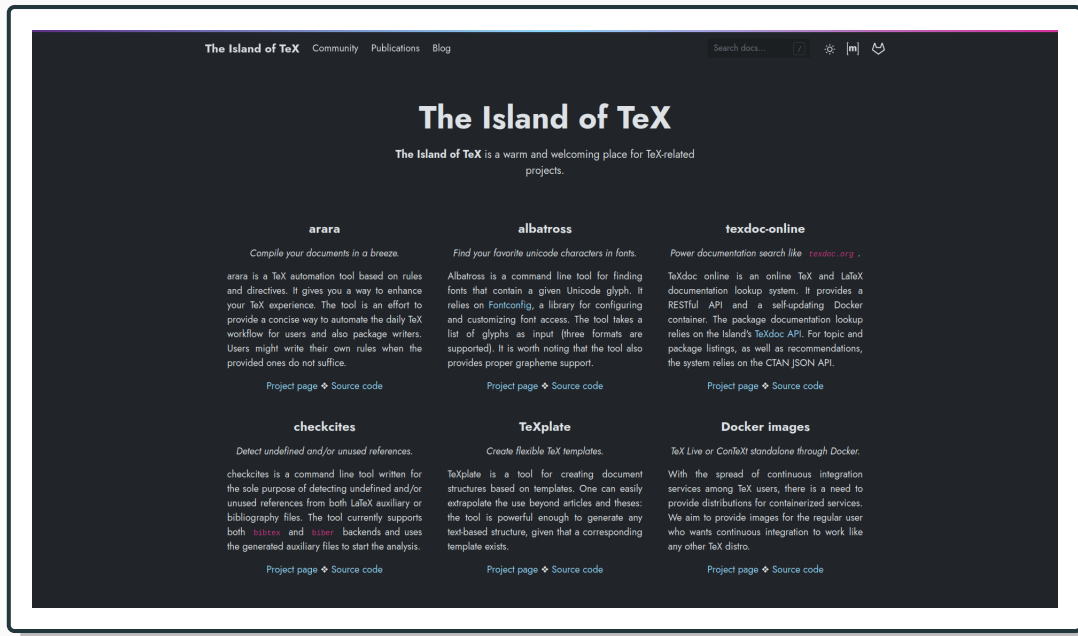
Docker images

TeX Live or ConTeXt standalone through Docker.

With the spread of continuous integration services among TeX users, there is a need to provide distributions for containerized services. We aim to provide images for the regular user who wants continuous integration to work like any other TeX distro.

[Project page](#) [Source code](#)

Light mode



Dark mode



Hosted at
Gitlab



Powered
by Zola



Projects
are indexed



Continuous
integration



Dedicated
CI runners



Robustness
and reliability



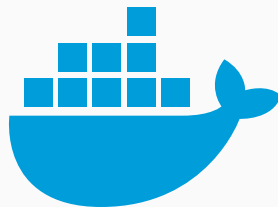
<https://gitlab.com/islandoftex/images>



Improved
layering



Splitting
by schemes



Most complete and comprehensive T_EX Live
Docker images available in the T_EX ecosystem



We are welcoming packages
to be part of our T_EX tree



<https://gitlab.com/islandoftex/texmf>



expkv-bundle

Collection of key/value packages for T_EX



<https://gitlab.com/islandoftex/texmf/expkv-bundle>



kvmap



Draw (even large) Karnaugh maps with T_EX



<https://gitlab.com/islandoftex/texmf/kvmap>

T_EX packages are welcome!



Our small core team is supported by the invaluable help of experts who participate in the island's projects



Yukai
Chou



website / docs



Sam
Carter



TeX packages

We thank all our contributors, even those
who are not explicitly listed in this keynote



Performance



Response
time



Memory/CPU
consumption



Error
handling

Implementing the font lookup
in the \TeX tree for albatross



Revision

d13a85d4



Revision

24f6b26e



Benchmarks

```
$ hyperfine --prepare 'rm -rf ~/.cache/albatross' \  
-L revision d13a85d4,24f6b26e \  
'java -jar {revision}.jar -t 0xDF; java -jar {revision}.jar -t 0xDF'  
d13a85d4: 15.09 s  
24f6b26e: 8.95 s
```

SHELL-
SESSION



Tooling



Kotlin
KMM



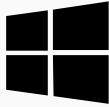
Kotlin
Native



GraalVM
Native



Rust
(oxidizing)



Windows



Linux



MacOS



JVM



JavaScript



WebAssembly



Preliminary experiments

BASH

```
# The native image builder is a utility that processes all  
# classes of an application and their dependencies and ahead-of-time  
# compiles that reachable code and data to a native executable for a  
# specific operating system and architecture  
$ native-image --no-fallback -cp ./albatross-jdk9-with-deps-*.jar  
↳ -H:Name=albatross -H:Class=org.islandoftex.albatross.ApplicationKt  
↳ -H:+ReportUnsupportedElementsAtRuntime  
↳ -H:ReflectionConfigurationFiles=../native/config.json
```



User experience



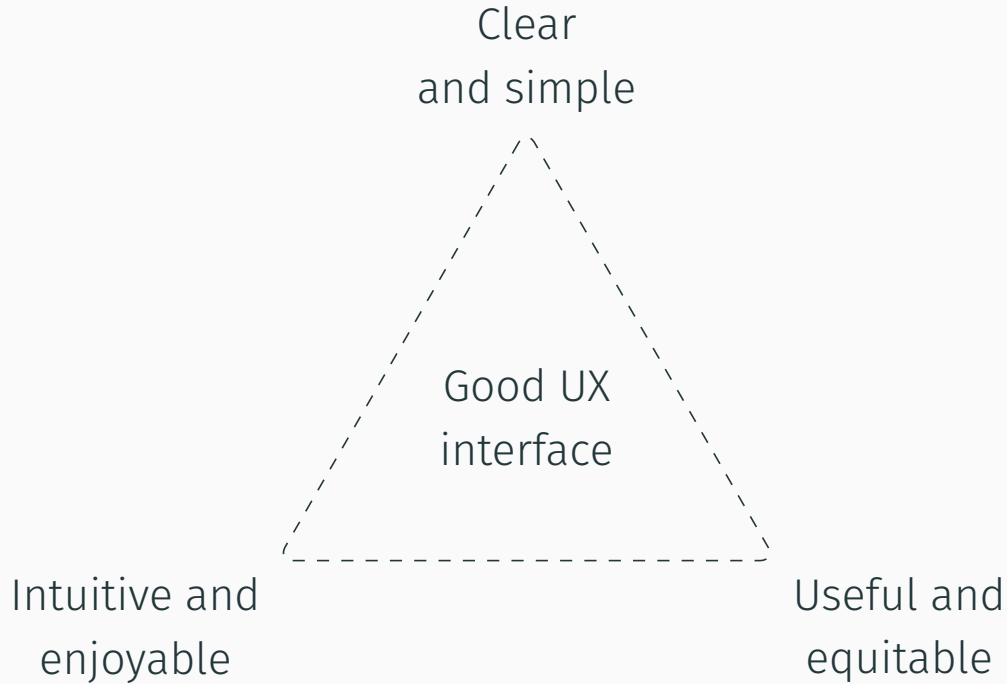
Usability



Consistency



Adaptability





Visual identity



Brand
recognition



Credibility and
professionalism



Cohesion and
consistency



Community
engagement



AA

Typography



Colour palette



Creative design



Logos



Imagery



Graphic elements



Custom theme for
presentations

help wanted



Website
redesign

help wanted



Landing pages
for all projects

help wanted



Updated
documentation

help wanted



On the road towards
a new visual identity



<https://islandoftex.gitlab.io/blog/new-website/>

Our projects:
things to conquer

A bright future awaits!



arara: compile your
documents in a breeze



From YAML
to Lua

help wanted



Full KMM
code base

help wanted



Concurrent
automation

help wanted



Modular
approach

help wanted



albatross: find your favorite
Unicode characters in fonts



Enhanced
interface

help wanted



Improved
caching

help wanted



Query
language

help wanted



Export
formats

help wanted



TeXdoc online: an online TeX and LaTeX documentation lookup system



Redesigned
frontend

help wanted



Feedback
and analytics

help wanted



Search engine
optimization

help wanted



Multiple TL
releases

help wanted



checkcites: detect undefined
and/or unused references



Kotlin
rewrite

help wanted



KibTeX
validation

help wanted



Interface
implementation

help wanted



JavaScript
targeting

help wanted



TeXplate: create flexible TeX templates



Code
refactoring

help wanted



Interface
redesign

help wanted



Scripting
support

help wanted

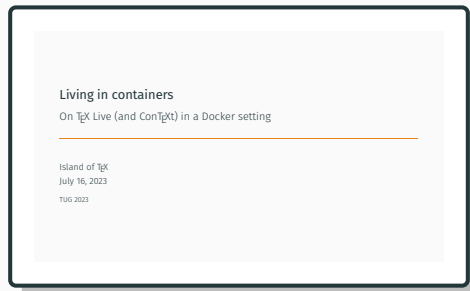


Graphical user
interface

help wanted



Docker images: T_EX Live or ConT_EXt standalone through Docker



help wanted

new project



Management tool for T_EX installations



Scope
statement

help wanted



API endpoint
design

help wanted



Backend
development

help wanted



Interface
proposal

help wanted



If you like T_EX, see missing pieces in the T_EX ecosystem, or want to start contributing to open-source software in a welcoming environment...

We would love to hear from you!



The island is always open!



Tourists



Regular visitors



New residents

Visas for the island
are free and easy to get!



The Island of \TeX is hosted at

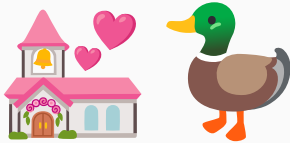


<https://gitlab.com/islandoftex>

Join our community chat on Matrix at



<https://matrix.to/#/#iot-community:matrix.org>



*Duck news: I am going to get married on
January 6, 2024, and move to Rio de Janeiro!*

Cheerio!

