

Use Quarto, Make Friends!

Chi Zhang, PhD

Oslo Center for Biostatistics and Epidemiology,
University of Oslo & Oslo University Hospital

21/09/2024, Kolkata R users meetup

About me

Statistician turned R developer - Real World Data and large public health registries

50% lecturer in biostatistics @ Faculty of Medicine, University of Oslo, Norway

Developer of statistics course website with **R+quarto+webR**

A few side projects... CAMIS, ggehr



Use Quarto, Make Friends

My personal WEBSITE journey - **blogdown -> quarto**

How I expanded the quarto use cases organically

Some thoughts on Quarto's role on **networking** and **career development**

Some catch-up on the latest **quarto trends**

Demo if we have time



My personal WEBSITE journey

It all started in 2019

I was doing my PhD in Oslo

Had **no data**

Twitter was still a thing back then

It was a mix of reasons to kick start the journey:

twitter -> DS blogs -> **growing R community** -> meetups
+ **free time**



Medium

Welcome to Medium, where words matter.

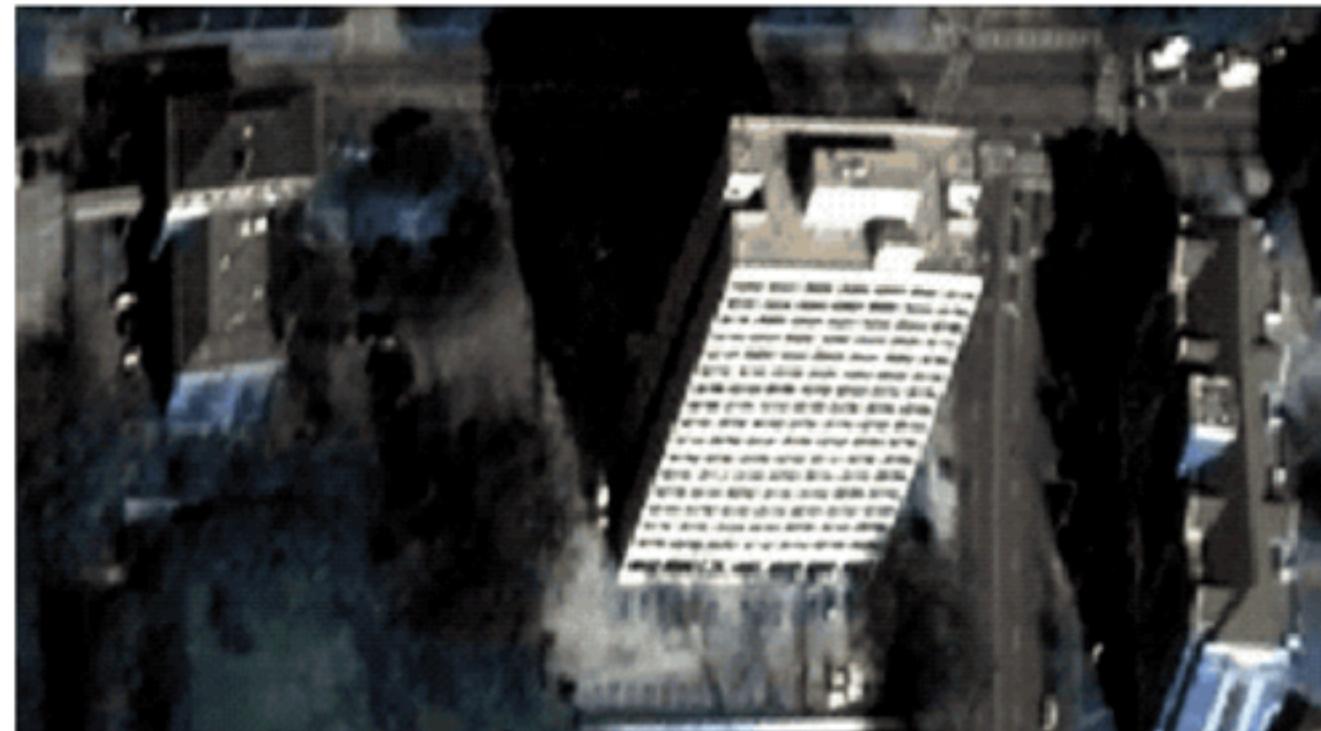


M

Towards Data Science

Sharing concepts, ideas, and codes

DATA SCIENCE MACHINE LEARNING PROGRAMMING VISUALIZATION AI DATA JOURNALISM CONTRIBUTE



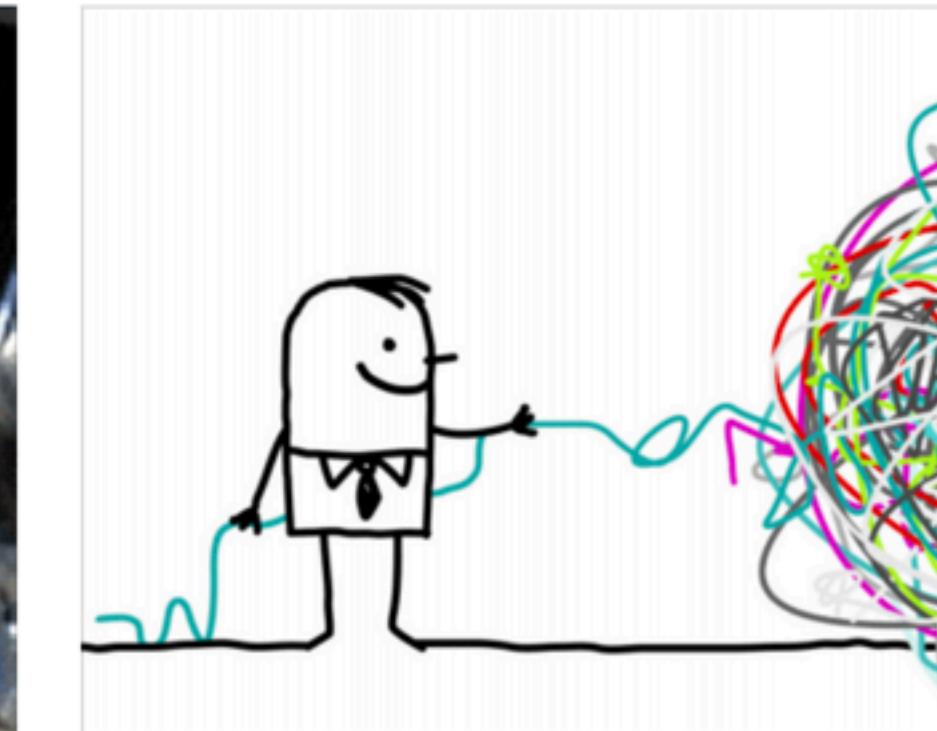
Towards accelerating disaster response with automated analysis of overhead imagery

A review of the SpaceNet Challenge for off-nadir building footprint extraction



Nick Weir

Mar 29 · 14 min read ★



"GANs" vs "ODEs": the end of mathematical modeling?

Hi everyone! In this article, I would like to make a connection between classical mathematical modeling, that we study in school, college...



Alexandr Honchar

Mar 26 · 7 min read ★

1. Data Analysis

Let's start our journey. We have store sales for a given date. Field `Open` denotes whether the store was functional that day or not. Store XYZ remains closed on Sundays. So, we will take into account the days, only when the store was open.

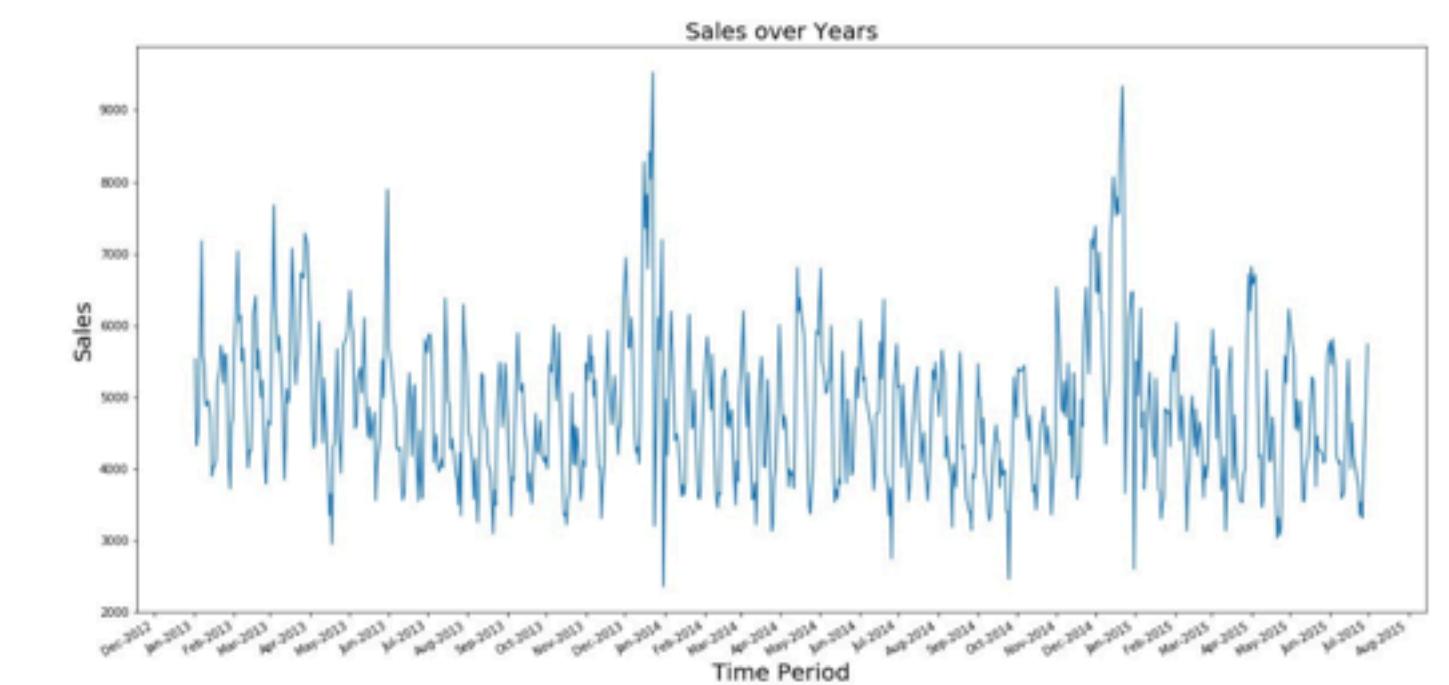
Graphic visualization of Store sales over the time period.

```
1 fig, ax = plt.subplots(figsize=(20,10))
2 ax.xaxis_date()      # interpret the x-axis values as dates
3 ax.plot(df['Date'], df['Sales'])
4 ax.xaxis.set_major_locator(mdates.MonthLocator(interval=1))
5 ax.xaxis.set_major_formatter(mdates.DateFormatter('%d-%m-%Y'))
6 ax.xaxis.set_major_formatter(mdates.DateFormatter('%b-%Y'))
7 plt.xlabel("Time Period", fontsize=20)
8 plt.ylabel("Sales", fontsize=20)
9 plt.title("Sales over Years", fontsize=20)
10 plt.gcf().autofmt_xdate()
11 plt.show()
```

code.py hosted with ❤ by GitHub

view raw

Code to visualize Sales over time



Store sales over time



I used blogdown to build my website



Static website generator
Takes source directory of files as input, Formatted text
to create a complete website

Markup language,
Formatted text

The famous “Academic” template

Academic Home Publications Posts Projects Tutorials Contact



Nelson Bighetti

Professor of Artificial Intelligence
Stanford University

[✉](#) [Twitter](#) [Google](#) [GitHub](#)

Biography

Nelson Bighetti is a professor of artificial intelligence. His research interests include distributed robotics, programmable matter. He leads the Robotic Neurobiology group, working on self-reconfiguring robots, systems of self-organizing sensors and actuators, and self-repairing networks.

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

Interests

- Artificial Intelligence
- Computational Linguistics
- Information Retrieval

Education

- PhD in Computer Science, Stanford University
- MEng in Electrical Engineering, Massachusetts Institute of Technology
- BSc in Computer Science, Massachusetts Institute of Technology

default ocean forest dark

ACADEMIC ACADEMIC ACADEMIC ACADEMIC



Lena Smith
Professor of Artificial Intelligence
Stanford University

[✉](#) [Twitter](#) [Google](#) [GitHub](#)

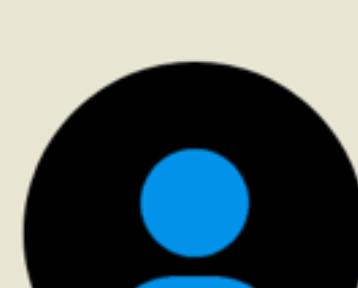
apogee 1950s coffee cupcake

Academic ACADEMIC ACADEMIC Academic



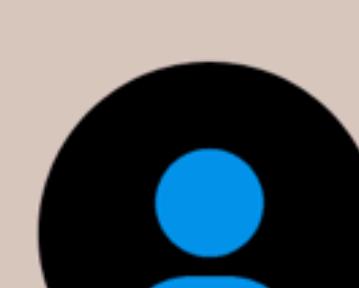
Lena Smith
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Did a talk at local useR meetup

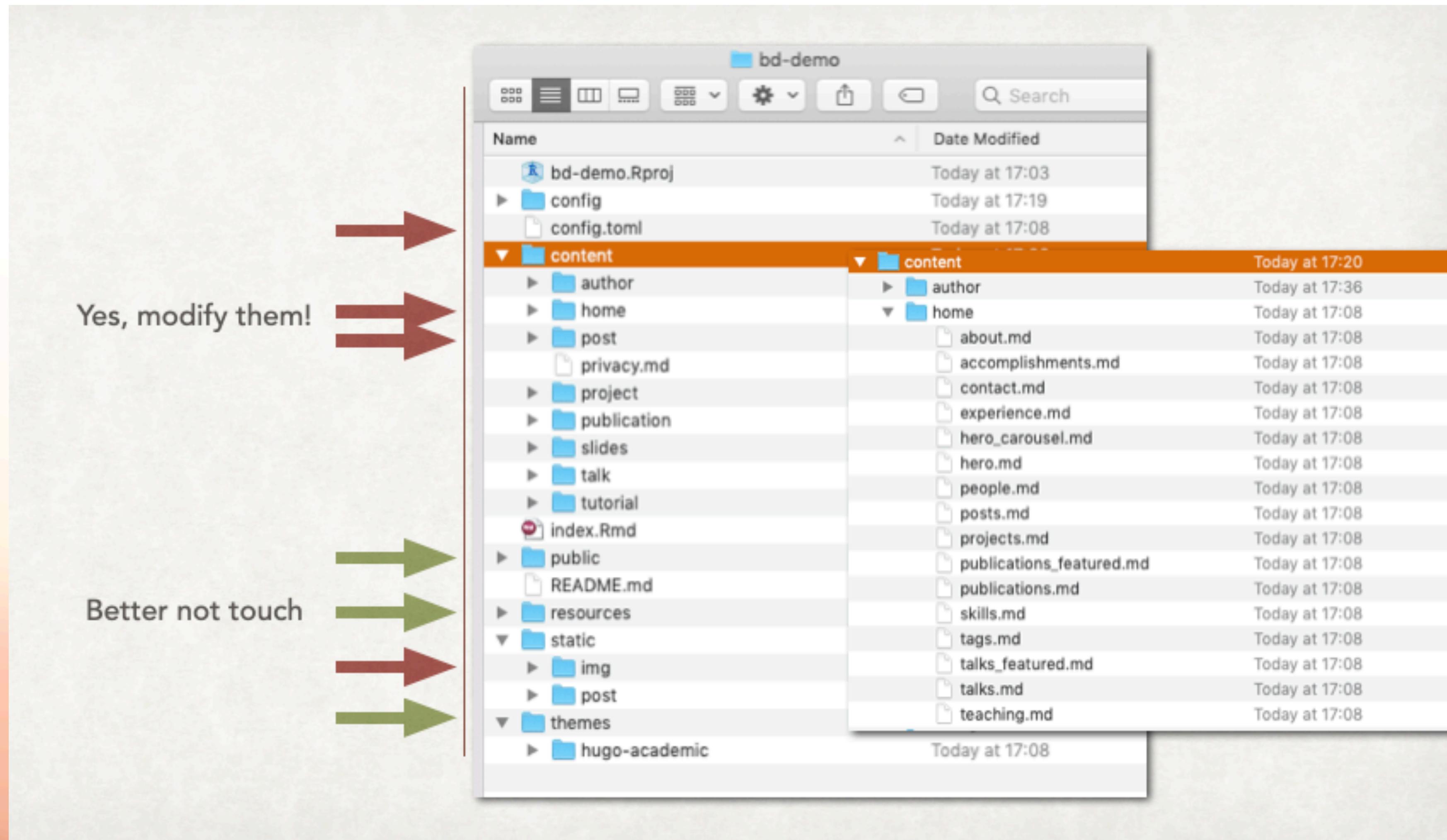
BUILDING WEBSITE IN R: STEP BY STEP INTRODUCTION TO



2019-4-2 @ UseR! Oslo Meetup, Teknologihuset



The many documents



An alternative back then: distill



Distill for R Markdown

Scientific and technical writing, native to the web

AUTHORS

JJ Allaire 

Rich Iannone

Alison Presmanes Hill 

Yihui Xie 

Christophe Dervieux 

AFFILIATIONS

Posit Software, PBC

PUBLISHED

Sept. 10, 2018

CITATION

Allaire, et al., 2018

Contents

[Creating an article](#)

Distill for R Markdown is a web publishing format optimized for scientific and technical communication. Distill articles include:

The background features a stylized landscape of overlapping waves in shades of orange, red, and purple. The waves are layered, creating a sense of depth. The colors transition from deep purple at the top to bright orange at the bottom.

Three years gap

A few things happened in 2022

COVID pandemic had calmed down - PHEIC ended officially in 2023.5

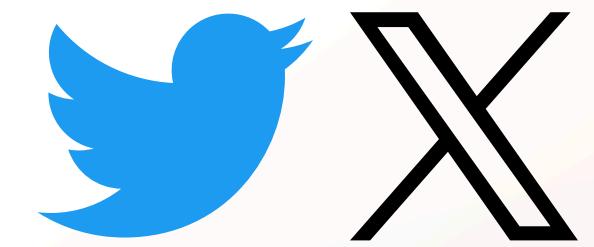
... which means **more time for side projects** (I was working in public health)

I finished my PhD with a **severe burnout**

Desperately need a distraction



Twitter became X



Posit rebranded



Quarto released in July 2022

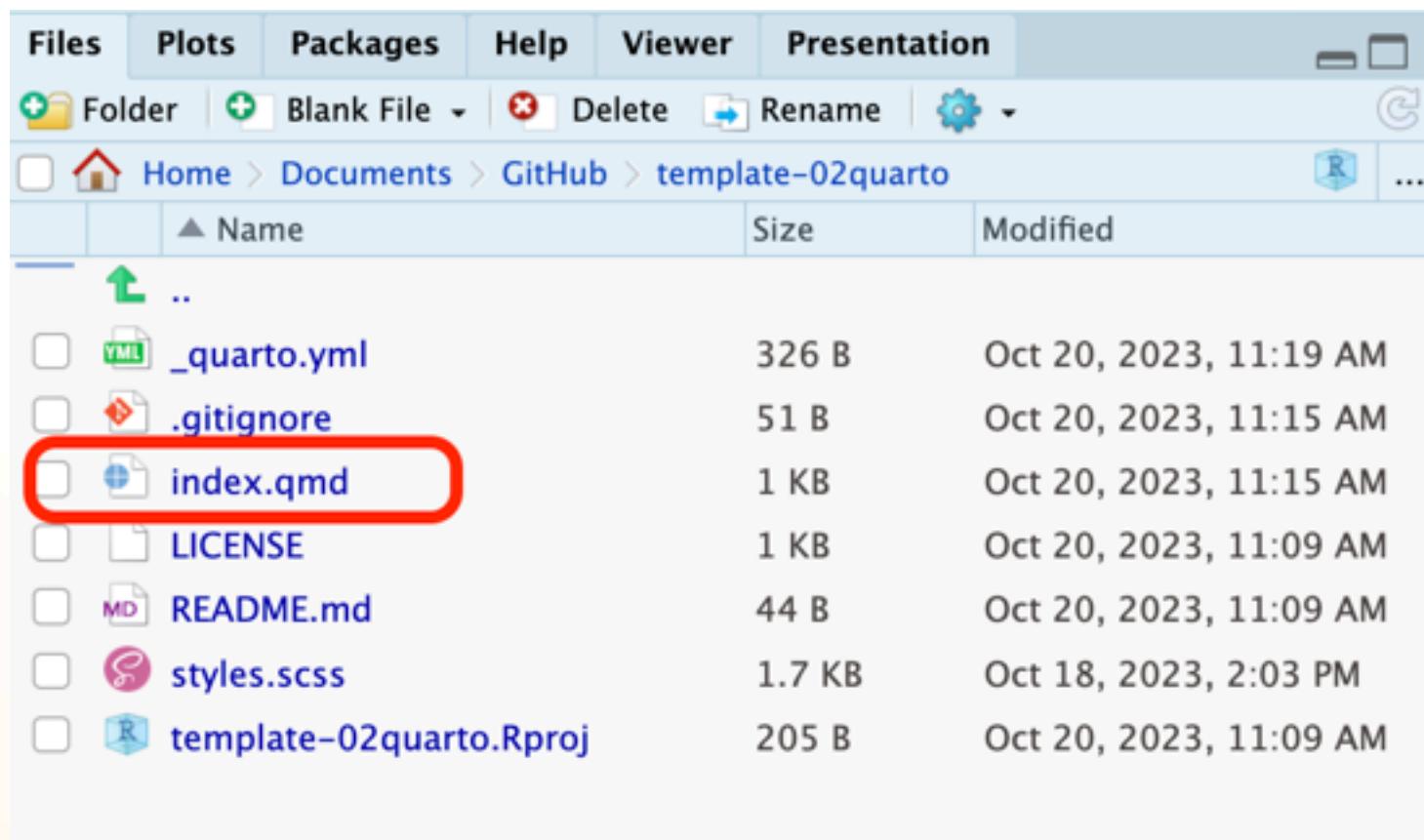


Blogdown -> Quarto

People started to make their website in Quarto, I might as well take a crack at it



Blogdown -> Quarto



Only need 2 files to make a website work: _quarto.yml, index.qmd

The many folders were gone

_quarto.yml much easier to read

Not so many strange rendered files

The screenshot shows the RStudio interface with the following content:

```
template-02quarto - main - RStudio
index.qmd x quarto.yml x
project:
  type: website
  output-dir: docs
  website:
    page-navigation: true
    title: "Zero to Quarto Workshop"
  navbar:
    left:
      - href: index.qmd
        text: Home
    right:
      - icon: github
        href: https://github.com
  format:
    html:
      # theme: zephyr
      theme: styles.scss
      toc: true
13:1
```

The R console shows:

```
R 4.3.1 - ~/Documents/GitHub/template-02quarto/
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.
```

The browser window shows the rendered website:

Zero to Quarto Workshop

Build your first quarto website (or something other cool things!)

Date: Monday 23 October 2023, 6:30PM to 8:00PM, CEST

Place: KO2-F-153, Rämistrasse 71, Zürich.

Event link

Blogdown -> Quarto

Better official documentation

Deployment is easy, directly from
GH pages

URL is just your [repo.github.io](#)

More users -> better community
discussions and support

The screenshot shows the Quarto website's navigation bar at the top, featuring the Quarto logo, Overview, Get Started, Guide, Extensions, Reference, Gallery, Blog, and Help. Below the navigation is a header for the "Quarto Blog" with the subtitle "News, tips, and commentary about all things Quarto". A blog post card is displayed, titled "Quarto 1.5" by Charlotte Wickham on Jul 11, 2024. The post discusses improvements like Typst support and draft handling. To the right of the post is a blue sidebar with the Quarto 1.5 logo and a red balloon icon.

quarto Overview Get Started Guide Extensions Reference Gallery Blog Help ▾

Quarto Blog

News, tips, and commentary about all things Quarto

Jul 11, 2024
Charlotte Wickham

Quarto 1.5

QUARTO 1.5 RELEASES

Quarto 1.5 improves Typst support, has some website enhancements like draft handling and announcement bars, adds a native Julia engine, and adds a couple of shortcodes for generating placeholder content.

quarto 1.5

Blogdown -> Quarto

Old blog in 2023 January

Hello, I'm Chi

Projects Teaching R packages Talks

Website reboot: switching from Blogdown to Quarto

QUARTO WEBSITE

Time to reboot the personal website. Now, with Quarto

AUTHOR
Chi Zhang

PUBLISHED
January 3, 2023

From Blogdown to Distill

Since the first time I tried the “academic” template in the popular `blogdown` package in 2019, three years have passed. Back then, it was THE way to build a personal website using R. The “academic” template was notoriously rich in content, and my solution was to delete components, compile, if it works – great; if not, I put the deleted content back. It worked for a while.

When the `distill` package came out (probably in 2020?), I rebooted my website since I preferred its clean, minimalistic style. The look was possibly more appropriate for websites for an organisation or tutorials rather than personal blog, yet I appreciated the simplicity.

Then I stopped updating my website. Between mid 2020 and early 2022, I was too stressed about completing my PhD, and balancing my other two jobs wasn’t the easiest thing. During this period, my mind had been going back to the old site from time to time, but it was hard to find enough time or energy to write about stuff.

Time to try Quarto

Build a workshop website

Had the opportunity to help with a **one-day workshop**

I suggested to use Quarto to build it

R scripts from previous years already available

Not so much work on my side - just put them in .qmd, build site

The **first quarto workshop website** at University of Oslo (as far as I know)

Oslo Bioinformatics Home About

Preparation
R Lab - Part I
R Lab - Part II

Statistical Principles in Machine Learning for Small Biomedical Data

Date: **Tuesday 13 December 2022, 9:00-12:00**

Room: **Python (room 2269), Ole-Johan Dahls hus (OJD)**

Instructors: Manuela Zucknick (main), Theophilus Asenso and Chi Zhang

Build a workshop website

Oslo Bioinformatics

Home About



Preparation
[R Lab - Part I](#)
[R Lab - Part II](#)

R Lab - Part I

⟨⟩ Code

A Cancer Modeling Example

See [StatPrinciples_RLab.pdf](#) for some background info.

Exercise on analysis of miRNA, mRNA and protein data from the paper Aure et al, Integrated analysis reveals microRNA networks coordinately expressed with key proteins in breast cancer, Genome Medicine, 2015.

Please run the code provided to replicate some of the analyses in Aure et al. (2015). Make sure you can explain what all the analysis steps do and that you understand all the results.

In addition, there are three extra tasks [Task 1](#), [Task 2](#), [Task 3](#), where no R code is provided. Please do these tasks when you have time available at the end of the lab.

Install R packages

```
install.packages("glmnet")
install.packages("gclus")
```

Load the data

Read the data, and convert to matrix format.

```
mir <- read.table("lab/data/miRNA-421x282.txt", header=T, sep="\t", dec=".")
rna <- read.table("lab/data/mRNA-100x282.txt", header=T, sep="\t", dec=".")
prt <- read.table("lab/data/prot-100x282.txt", header=T, sep="\t", dec=".")

# Convert to matrix format

mir <- as.matrix(mir)
rna <- as.matrix(rna)
prt <- as.matrix(prt)
```

On this page

[A Cancer Modeling Example](#)
[Install R packages](#)
[Load the data](#)
[Explore the correlations](#)
[Visualize as heatmap](#)

Build a R package out of it

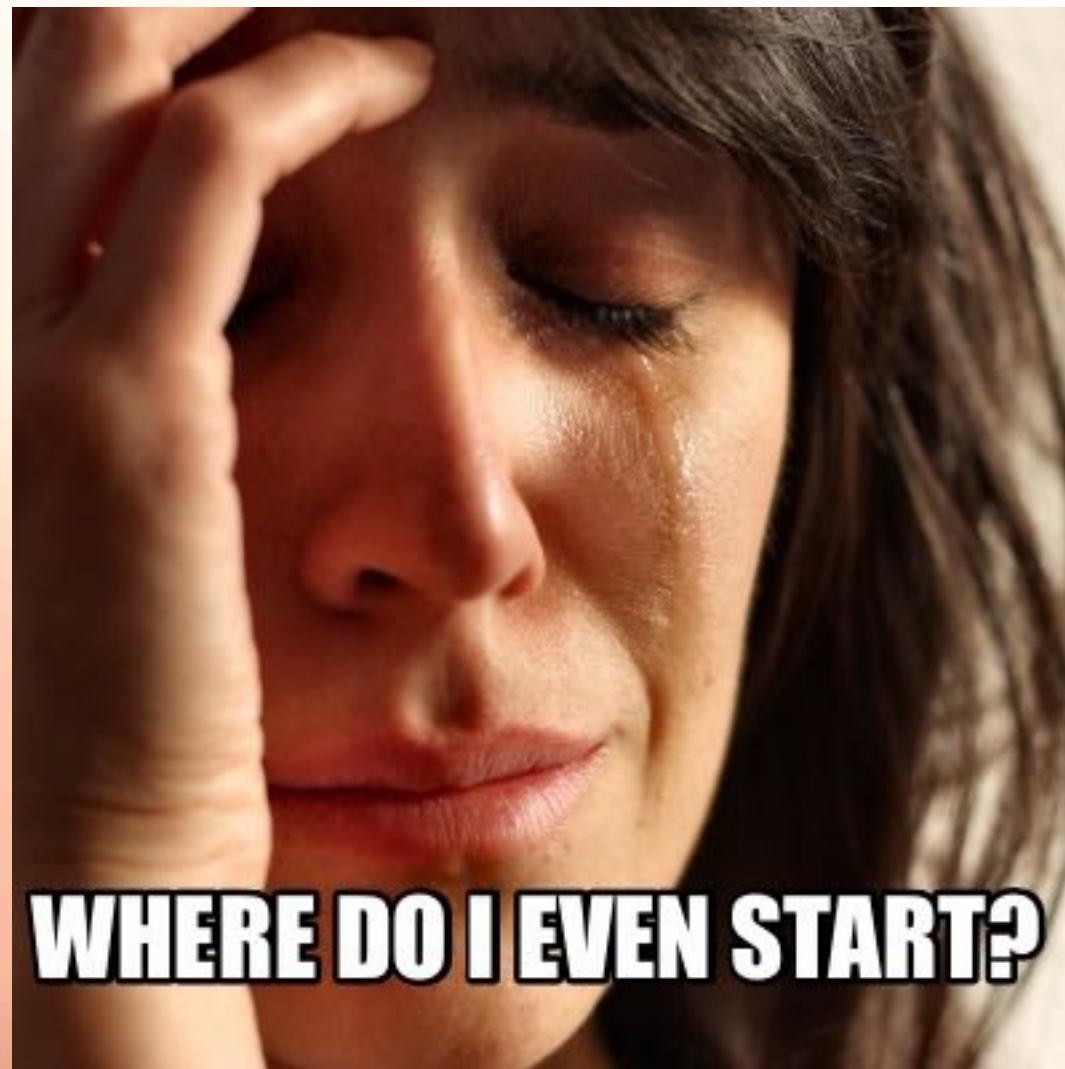
It was still a **new thing** in early 2023

People hesitate:

- what is quarto, should I do it

If only there was a tool to provide just the **minimum needed** to get people started

I love **making tutorials** and learn new stuff myself along the way



Build a R package out of it

The screenshot shows two pages of the qtwAcademic package. The top part is the homepage with a navigation bar: qtwAcademic 2023.1.12, Get started, Reference, Articles ▾, Changelog. Below the navigation is the title "qtwAcademic". To the right is a blue hexagonal icon containing a computer monitor with a graduation cap. The main content area contains text about what qtwAcademic stands for (Quarto Websites for Academics) and how it makes it easy for users to create academic websites. It also mentions that there are three templates available: Personal website, Website for courses or workshops, and Minimal website template. A link to more details on vignettes is provided at the bottom.

qtwAcademic stands for **Quarto Websites for Academics**, which provides a few Quarto templates for Quarto website that are commonly used by academics.

The templates are designed to make it quick and easy for users with little or no Quarto experience to create a website for their personal portfolio or courses. Each template is fully customizable once the user is more familiar with Quarto.

More about Quarto can be read [here](#).

Templates

So far, 3 templates have been implemented in this package:

- Personal website
- Website for courses or workshops
- Minimal website template that can be easily customized

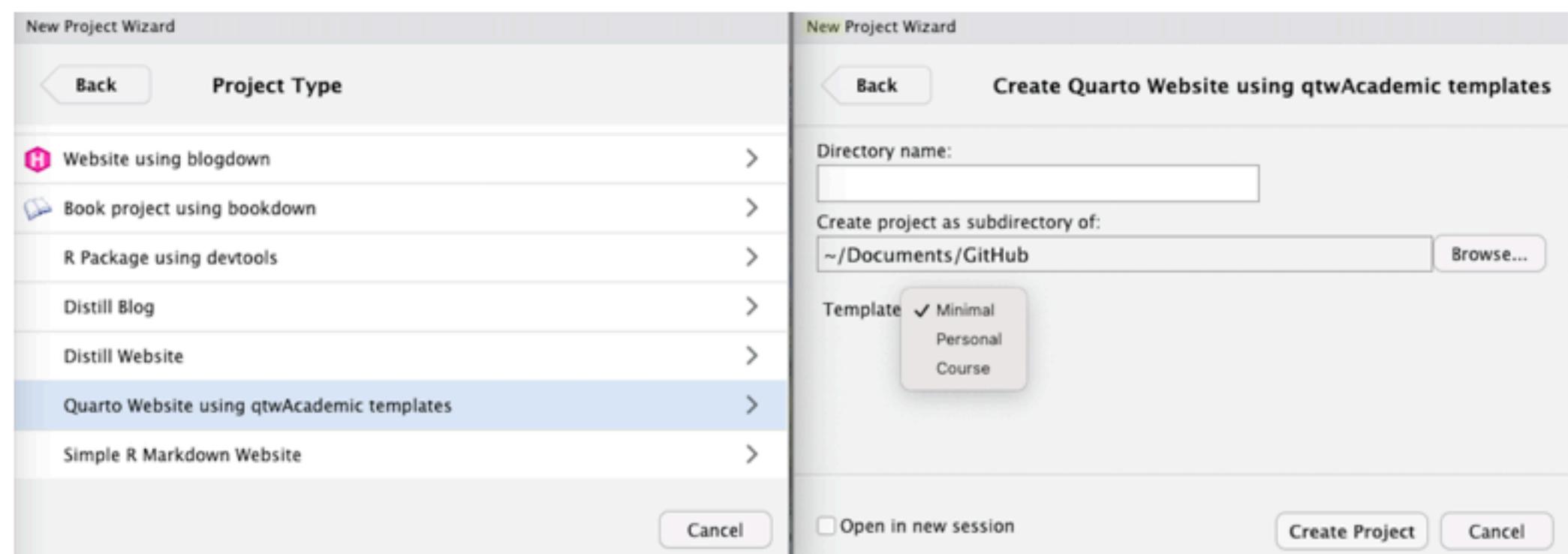
You can find more details on each option in the vignettes.

Usage

After installation, you should be able to create an R project with the RStudio project wizard.

In RStudio,

1. File > New Project > New Directory
2. Scroll down and click **Create Quarto Website using qtwAcademic templates**
3. In the drop-down menu, select the template you prefer.



This will generate a self-contained R project ready for render.

Did not have time to update, nor was there need anymore.... Quarto became **mainstream**

NEW JOB: biostatistics lecturer

I got a 50% position at University of Oslo as
biostatistics lecturer

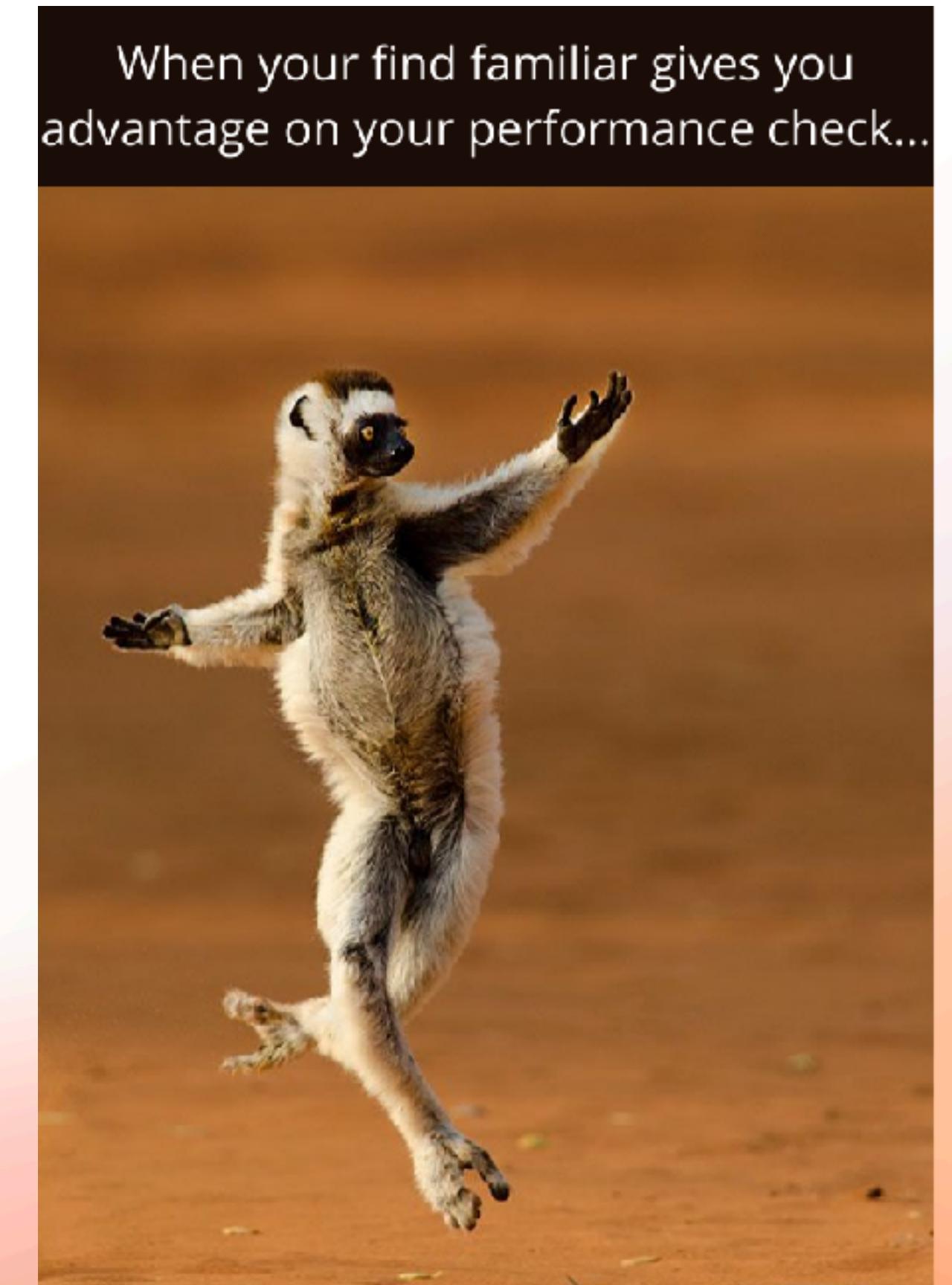
Introductory statistics (MF9130)

STATA

Latex, ppt, word doc, ... passed around in emails

I really do not like tex compiled files

... I have all the tools I need for a new course website!



When your find familiar gives you
advantage on your performance check...

Single day workshop -> Two week course

The sheer **volume of work** is crushing

- 12 lab (exercise) sessions
- need to create R scripts, qmd files for all exercises **from scratch**

Audience: medical students / clinicians / psychologists / ...

= **no IT skills**



Single day workshop -> Two week course

https://ocbe-uio.github.io/teaching_mf9130e/

The screenshot shows a website with a blue header bar. The header contains the text "MF9130E - V23" and navigation links for "Home", "Get Started", "Course material", "R Lab and Code", and "About". On the right side of the header are icons for a user profile and a search bar.

Get started

Here you will find useful information on how to get started.

In this workshop we will be using R. You can either

- (recommended) have **R and Rstudio** installed on your laptop
- or, use **Posit cloud** (formerly Rstudio Cloud).

Option 1: Set up your RStudio on your laptop

You will need both R and Rstudio, they are two separate things.

You can download **Rstudio** [here](#). In this page it will ask you to install R, so it should be clear to follow.

1: Install R

RStudio requires R 3.3.0+. Choose a version of R that matches your computer's operating system.

[DOWNLOAD AND INSTALL R](#)

2: Install RStudio

[DOWNLOAD RSTUDIO DESKTOP FOR MACOS 11+](#)

This version of RStudio is only supported on macOS 11+ and higher. For earlier macOS environments, please [download a previous version](#).

Size: 374.55 MB | [SHA-256: ED87B818](#) | Version: 2023.03.0+385 | Released: 2023-03-16

Need to provide a lot of guide to students with no IT skills

Downloading and finding data can be a challenge

Single day workshop -> Two week course

Lab notes	Topics	Links	On this page
Getting started in Rstudio	Create new project, workspace navigation		Set up Data and R scripts Lab notes and exercises Useful resources
Introduction to R	Create a variable, data types, data structure, basic data manipulation, import data	code	
Diagnostic tests	Evaluation of diagnostic tests, sensitivity, specificity		
Statistical distributions	Statistical distributions		
EDA I	Exploring a dataset, descriptive statistics	exercise , code	
EDA II	(Week 2) More on data manipulation, visualisation	code	
t-test	One sample, two sample t-tests	exercise , code	
Categorical data analysis	Proportions, contingency table, chi-square test	exercise , code	
Non-parametric tests	Wilcoxon signed test, rank sum test	exercise , code	
Sample size, power	Sample size, power calculation	code: lecture , code: exercises	

More structured content

Lots of examples

Single day workshop -> Two week course

Exercise 1 (heart data)

The weight of the hearts of 20 men with age between 10 and 15 years and is given below (in ounces, 1 ounce = 28g)

11.50 14.75 13.75 10.50 14.75 13.50 10.75
10.50 11.75 10.00 14.50 12.00 11.00 14.00

1a)

Create a variable in R, and enter the data. Compute the mean by hand using the formula; then verify it with R function.

Formula: mean

The mean of data $X = (x_1, x_2, \dots, x_n)$, $\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i$

```
# enter the data
heart <- c(11.5, 14.75, 13.75, 10.5, 14.75,
          13.5, 10.75, 9.5, 11.75, 12, 10.5, 11.75, 10, 14.5, 12, 11, 14, 15, 11.5, 10.25)
```

```
# compute sum
sum_heart
[1] 243.25
```

```
# compare with 11
boxplot(heart, horizontal = T, main = 'Compare with mean = 11')
abline(v = mean(heart), col = 'red', lwd = 3)
abline(v = c(ci_lower, ci_upper), col = 'red', lwd = 2,
       lty = 'dashed')
abline(v = 11, col = 'forestgreen', lwd = 3)
```

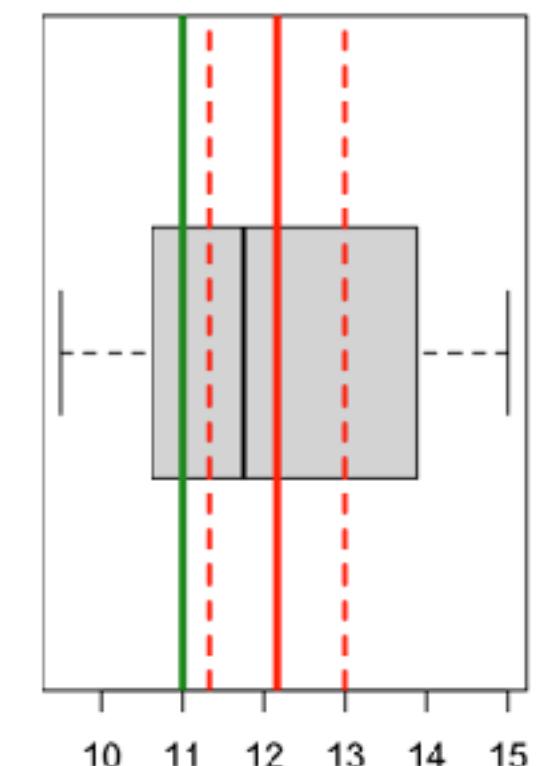
```
# sample size
n <- 20
# if we do
sum_heart
```

```
[1] 12.1625
```

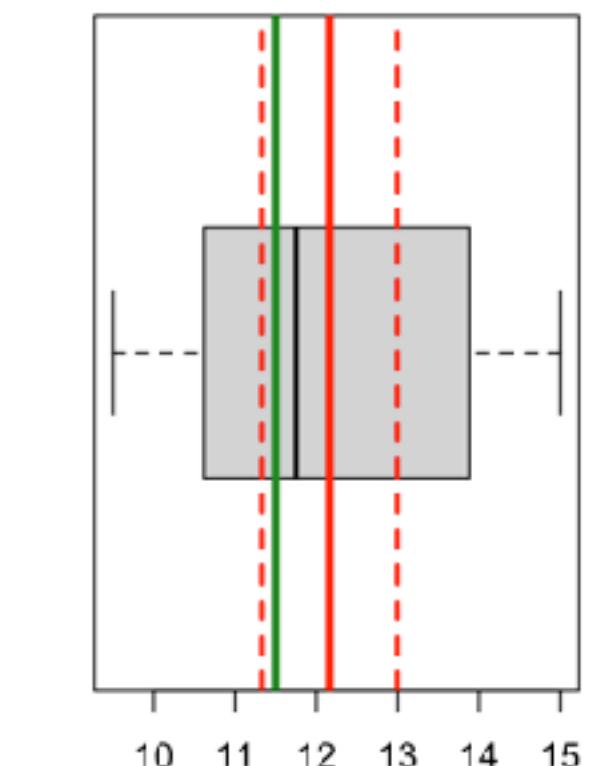
```
# formula
mean(heart)
```

```
[1] 12.1625
```

Compare with mean = 11



Compare with mean = 11.5



Live coding lab session

Upgrade in 2024



MF9130E - V24 [Home](#) [Get Started](#) [Schedule](#) [R Lab and Code](#) [About](#)



Binomial and Normal distribution

WEBR STATUS
● Ready!

On this page you will find some examples and code for probability distributions.

i Note

In your take-home exam, you will NOT be tested on programming (e.g. simulation) or theoretical results. Content on this page is to help you understand the math behind topics in the next days.

[⟨⟩ Code](#)

On this page

[Randomness and simulation \(optional\)](#)
[Binomial distribution](#)
[Normal distribution](#)
[Bar plot](#)
[Example: birth weight](#)
[Binomial vs Normal distribution](#)

Randomness and simulation (optional)

A random sample is **random**. For example, if you throw a 6 sided dice twice, you will possibly have different outcomes. This process can be **simulated** with the line below.

You can copy and paste this line to your R console, and **run it a few times**. Alternatively, click on **Run Code** button below a few times. You should see different results every time.

▶ [Run Code](#)

```
1 # take two numbers from 1,2,3,4,5,6
2 # replace = T means the same number can appear in both first and second
3 sample(1:6, size = 2, replace = T)
```

Added interactivity

Useful for certain parts of the lectures



Use Quarto, Make Friends

Good documentation is important

Co-workers who do / do not code

NorEden HOME NORDEN NORKOST ABOUT

Documentation

It is important to document while you go.

Title

[Part 1: Understand the current diet](#)

[Part 2: Problem definition](#)

[Part 3: A simple problem with 3 foods and 3 constraints](#)

[Part 4: Troubleshoot part 3](#)

[Part 5: 10 foods](#)

[Note on the input data](#)

[Flexible input with function factory](#)

[Literature review and article planning](#)

[Package development log](#)

Categories

All (9)

Part 3: A simple problem with 3 foods and 3 constraints

We document the optimization procedure with `nloptr` using a small example of 3 foods, and 3 constraints (energy, protein, ghge).

```
foods <- read.csv('data/foods.csv', sep = ',')
data.table::setDT(foods) # use data.table format

# we only take 3 foods
fd <- foods[food %in% c('Bread', 'Vegetables', 'Red meat')]
fd
```

	food	intake	energy	protein	fat	carbs	sugar	alcohol	ghge
1:	Bread	175.4	10.696	0.091	0.030	0.441	0.002	0	0.001
2:	Vegetables	154.6	1.565	0.015	0.008	0.050	0.005	0	0.001
3:	Red meat	117.6	8.342	0.173	0.139	0.014	0.000	0	0.013

On this page

[Constraints for 3 foods](#)

[Optimization](#)

[Reduce ghge to 80%](#)

Good documentation is important
Your future self

Data Apothecary's Notes Methods Reporting Programming About

Inference and models



Settings

Hello, welcome!

This is the note repository for Data Apothecary's Notes. The repository aims to provide skills with a focus on real-world data and evidence, and clinical applications. Content will be gradually added, covering topics, and mostly focused on real-world data and evidence. This means a complete coverage of the field is not guaranteed.

I try to organize the content so that it should cover the important aspects of a scientist / modern statistician.

- study design
- inference
- models
- reporting
- programming

Any feedback / mistakes can be found [here](#). The repository is open source and contributions are welcome.

Study design

- Survey
- Clinical trial design
 - Phase I, II, III
 - adaptive design
- Sample size calculation
 - comparing a few groups (visualization TBD)
 - regression (LR, GLM)
 - more advanced model (e.g. GLMM)

On this page

Settings

Study design

Causal inference

Models

Other topics

Case studies

Categories

All (25)

Causal inference (6)

Clinical trial (1)

Design (1)

Drugs (1)

Inference (1)

Missing data (2)

Observational data (2)

Omics data (1)

RCT (3)

RWD (3)

Sample size (2)

Good documentation is important

Your future self

Inference and models

Settings

Different settings to apply methods.

Title	Description
Real-world Data, Real-world Evidence	RWD, RWE
Genomics in Drug Discovery	Use of machine learning techniques
Antibiotics	Background of antimicrobial drugs and resistance
RWD EHR Vendor Engagement	Overview of vendor engagement
Nutritional Epidemiology	About Food

Study design

- Survey
- Clinical trial design
 - Phase I, II, III
 - adaptive design
- Sample size calculation
 - comparing a few groups (visualization TBD)
 - regression (LR, GLM)
 - more advanced model (e.g. GLMM)

ON THIS PAGE

[Settings](#)
[Study design](#)
[Causal inference](#)
[Models](#)
[Other topics](#)
[Case studies](#)

Categories

All (25)
Causal inference (6)
Clinical trial (1)
Design (1)
Drugs (1)
Inference (1)
Missing data (2)
Observational data (2)
Omics data (1)
RCT (3)
RWD (3)
Sample size (2)

Make slides with `reveal.js`

[WEBSITE](#) [REVEALS](#)

Mostly for the possibility to embed in quarto website

AUTHOR
Chi Zhang

PUBLISHED
October 4, 2023

Embed in your own web page

`iframe` stands for inline frame. It is an HTML element that loads another HTML page within the document.



Zero to Quarto Workshop

Making your first quarto website with R-Ladies Zürich!



Chi Zhang
2023-10-23

Quarto is perfect for collaboration

As a personal / course website, it is not exactly a tool for collaboration

With the help of GitHub, collaboration is made easy

Very suitable for co-writing a **book**, a **documentation website** in a team

Project I: CAMIS



About Contribute Publications and projects ▾ News ▾

Motivation

The goal of this project is to demystify conflicting results between software and to help ease the transitions to new languages by providing comparison and comprehensive explanations.

Repository

The repository below provides examples of statistical methodology in different software and languages, along with a comparison of the results obtained and description of any discrepancies.

Methods	R	SAS	Python	Comparison	
Summary Statistics	Rounding	R	SAS	Python	R vs SAS
	Summary statistics	R	SAS	Python	R vs SAS
	Skewness/Kurtosis	R	SAS	Python	R vs SAS
General Linear Models	One Sample t-test	R	SAS	Python	R vs SAS
	Paired t-test	R	SAS	Python	R vs SAS
	Two Sample t-test	R	SAS	Python	R vs SAS
	ANOVA	R	SAS		R vs SAS
	ANCOVA	R	SAS	Python	R vs SAS
	MANOVA	R	SAS	Python	R vs SAS
	Linear Regression	R	SAS		R vs SAS
Generalized Linear Models	Logistic Regression	R	SAS		
	Poisson/Negative Binomial Regression	R			

On this page
Introduction
Motivation
Repository



PHUSE DVOST (data viz and open source tech) working group project

Comparing Analysis Methods and Implementation in Software

Pharmaceutical industry, primarily comparing **R and SAS**, adding python

Project I: CAMIS



```
. prtesti 1000 0.123 0.13
```

	x: Number of obs = 1000
Mean	Std. err.
.123	.0103861
[95% conf. interval]	
	.1026436 .1433564

p = proportion(x)
H0: p = 0.13

Ha: p < 0.13 Pr(Z < z) = 0.2552	Ha: p != 0.13 Pr(Z > z) = 0.5104	Ha: p > 0.13 Pr(Z > z) = 0.7448
------------------------------------	---	------------------------------------

```
> prop.test(x = 123, n = 1000, p = 0.13, alternative = 'less' correct = F)
```

1-sample proportions test without continuity correction

data: 123 out of 1000, null probability 0.13
X-squared = 0.43324, df = 1, p-value = 0.2552
alternative hypothesis: true p is less than 0.13
95 percent confidence interval:
0.0000000 0.1411081
sample estimates:
p
0.123

```
> prop.test(x = 123, n = 1000, p = 0.13, alternative = 'less')
```

1-sample proportions test with continuity correction

data: 123 out of 1000, null probability 0.13
X-squared = 0.37356, df = 1, p-value = 0.2705
alternative hypothesis: true p is less than 0.13
95 percent confidence interval:
0.0000000 0.1416364
sample estimates:
p
0.123

Quarto is used as a collaborative tool

For **R/python**, code can be rendered

For **SAS and others**, mix of screenshots and copy-paste

Project I: CAMIS



One Sample t-test Comparison

The following table shows the types of One Sample t-test analysis, the capabilities of each language, and whether or not the results from each language match.

Analysis	Supported in R	Supported in SAS	Match	Results Notes
One sample t-test, normal data	Yes	Yes	Yes	In Base R, use <code>mu</code> parameter on <code>t.test()</code> function to set null hypothesis value
One sample t-test, lognormal data	Maybe	Yes	NA	May be supported by <code>envstats</code> package

Comparison Results

Normal Data

Here is a table of comparison values between `t.test()`, `proc_ttest()`, and SAS `PROC TTEST`:

Statistic	t.test()	proc_ttest()	PROC TTEST	Match	Notes
Degrees of Freedom	29	29	29	Yes	
t value	2.364306	2.364306	2.364306	Yes	
p value	0.0249741	0.0249741	0.0249741	Yes	

```
proc freq data = test_case;
weight Count;
tables treatment * Weight / chisq fisher;
exact or;
run;
```

Output:

The FREQ Procedure																																		
<pre>proc means data=htwt; run;</pre>																																		
<p>Descriptive Statistics for HTWT Data Set The MEANS Procedure</p>																																		
<table><thead><tr><th>Variable</th><th>Label</th><th>N</th><th>Mean</th><th>Std Dev</th><th>Minimum</th><th>Maximum</th></tr></thead><tbody><tr><td>AGE</td><td>AGE</td><td>237</td><td>16.4430380</td><td>1.8425767</td><td>13.9000000</td><td>25.0000000</td></tr><tr><td>HEIGHT</td><td>HEIGHT</td><td>237</td><td>61.3645570</td><td>3.9454019</td><td>50.5000000</td><td>72.0000000</td></tr><tr><td>WEIGHT</td><td>WEIGHT</td><td>237</td><td>101.3080169</td><td>19.4406980</td><td>50.5000000</td><td>171.5000000</td></tr></tbody></table>							Variable	Label	N	Mean	Std Dev	Minimum	Maximum	AGE	AGE	237	16.4430380	1.8425767	13.9000000	25.0000000	HEIGHT	HEIGHT	237	61.3645570	3.9454019	50.5000000	72.0000000	WEIGHT	WEIGHT	237	101.3080169	19.4406980	50.5000000	171.5000000
Variable	Label	N	Mean	Std Dev	Minimum	Maximum																												
AGE	AGE	237	16.4430380	1.8425767	13.9000000	25.0000000																												
HEIGHT	HEIGHT	237	61.3645570	3.9454019	50.5000000	72.0000000																												
WEIGHT	WEIGHT	237	101.3080169	19.4406980	50.5000000	171.5000000																												
Statistics for Table of treatment by Weight																																		
Statistic		DF	Value	Prob																														
Chi-Square		1	2.3072	0.1288																														
Likelihood Ratio Chi-Square		1	2.2490	0.1337																														
Continuity Adj. Chi-Square		1	1.8261	0.1766																														
Mantel-Haenszel Chi-Square		1	2.2964	0.1297																														
Phi Coefficient			0.1041																															
Contingency Coefficient			0.1035																															
Cramer's V			0.1041																															

Project I: CAMIS



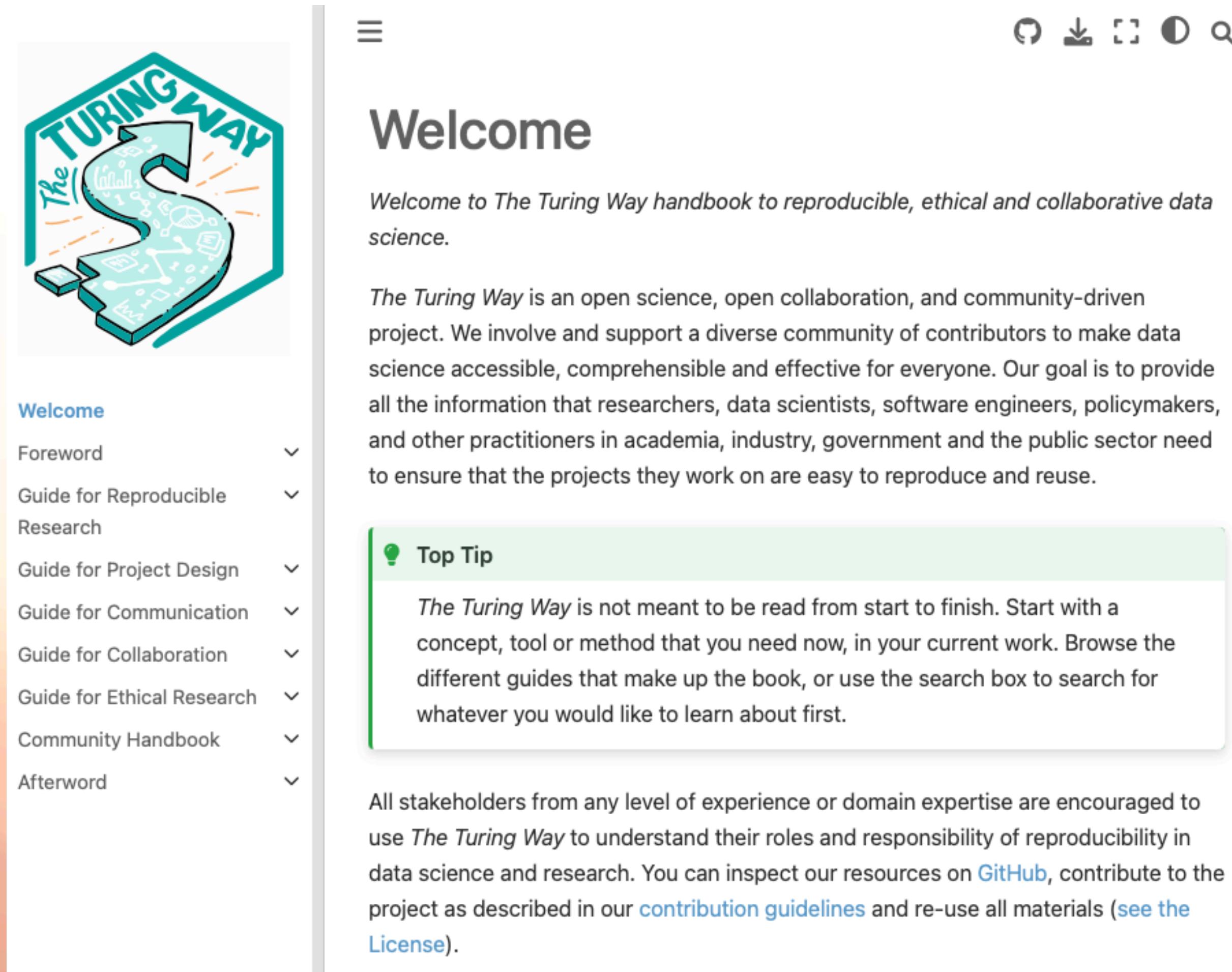
<input type="checkbox"/>	<input checked="" type="radio"/> 46 Open	<input checked="" type="checkbox"/> 37 Closed	Author ▾
<input type="checkbox"/>	<input checked="" type="radio"/> Pearson's/ Spearman's/ Kendall's Rank	<input type="button" value="Python"/>	#216 opened 3 weeks ago by seemaniabhilipsa
<input type="checkbox"/>	<input checked="" type="radio"/> Website: dissertation info	<input type="button" value="documentation"/>	#215 opened 3 weeks ago by andreaczhang <input checked="" type="radio"/> 2 of 4 tasks
<input type="checkbox"/>	<input checked="" type="radio"/> MANOVA	<input type="button" value="Python"/>	#208 opened on May 21 by seemaniabhilipsa
<input type="checkbox"/>	<input checked="" type="radio"/> Overall structure		#200 opened on May 6 by therneau
<input type="checkbox"/>	<input checked="" type="radio"/> Survey Statistics - Example/Comparison (Python)	<input type="button" value="Python"/>	#185 opened on Apr 15 by michaelwalshe
<input type="checkbox"/>	<input checked="" type="radio"/> add more contribution guidance		#143 opened on Feb 7 by DrLynTaylor
<input type="checkbox"/>	<input checked="" type="radio"/> Add more information about the version of R running and package		#139 opened on Jan 25 by statasaurus
<input type="checkbox"/>	<input checked="" type="radio"/> Other Methods - Machine learning	<input type="button" value="Comparison"/> <input type="button" value="R"/> <input type="button" value="SAS"/>	#67 opened on Mar 20, 2023 by statasaurus
<input type="checkbox"/>	<input checked="" type="radio"/> Other Methods - Causal inference	<input type="button" value="Comparison"/> <input type="button" value="R"/> <input type="button" value="SAS"/>	

Monthly community call

Everyone is encouraged to join, not just biotech/pharma

Let me know if you would like to participate!

Project II: The Turing Way



The screenshot shows the homepage of The Turing Way handbook. At the top right are icons for navigation (three horizontal lines), download (down arrow), print (document), and search (magnifying glass). On the left is a sidebar with a teal hexagonal logo containing the text "TURING WAY" and a stylized "S" made of data visualization icons like a bar chart and a scatter plot. The sidebar menu includes "Welcome", "Foreword", "Guide for Reproducible Research", "Guide for Project Design", "Guide for Communication", "Guide for Collaboration", "Guide for Ethical Research", "Community Handbook", and "Afterword". The main content area has a large heading "Welcome" and a sub-headline: "Welcome to *The Turing Way* handbook to reproducible, ethical and collaborative data science." Below this is a paragraph about the project's mission to make data science accessible, comprehensible, and effective. A "Top Tip" box contains advice: "The Turing Way is not meant to be read from start to finish. Start with a concept, tool or method that you need now, in your current work. Browse the different guides that make up the book, or use the search box to search for whatever you would like to learn about first." At the bottom, a note encourages stakeholders to use the handbook for reproducibility and provides links to GitHub and contribution guidelines.

Welcome

Foreword

Guide for Reproducible Research

Guide for Project Design

Guide for Communication

Guide for Collaboration

Guide for Ethical Research

Community Handbook

Afterword

Welcome

Welcome to *The Turing Way* handbook to reproducible, ethical and collaborative data science.

The Turing Way is an open science, open collaboration, and community-driven project. We involve and support a diverse community of contributors to make data science accessible, comprehensible and effective for everyone. Our goal is to provide all the information that researchers, data scientists, software engineers, policymakers, and other practitioners in academia, industry, government and the public sector need to ensure that the projects they work on are easy to reproduce and reuse.

Top Tip

The Turing Way is not meant to be read from start to finish. Start with a concept, tool or method that you need now, in your current work. Browse the different guides that make up the book, or use the search box to search for whatever you would like to learn about first.

All stakeholders from any level of experience or domain expertise are encouraged to use *The Turing Way* to understand their roles and responsibility of reproducibility in data science and research. You can inspect our resources on [GitHub](#), contribute to the project as described in our [contribution guidelines](#) and re-use all materials ([see the License](#)).

Handbook for reproducible, ethical and collaborative data science

Online event: book-dash

A whole week to work together with people across the world to write chapters

Based in UK

Project II: The Turing Way

the-turing-way / the-turing-way

Type ⌘ to search | + ⏮ ⏭

< Code Issues 461 Pull requests 98 Discussions Actions Projects 1 Security 10

the-turing-way Public Edit Pins Watch 62 Fork 639 ⏮ ⏭

main Go to file t + < Code About

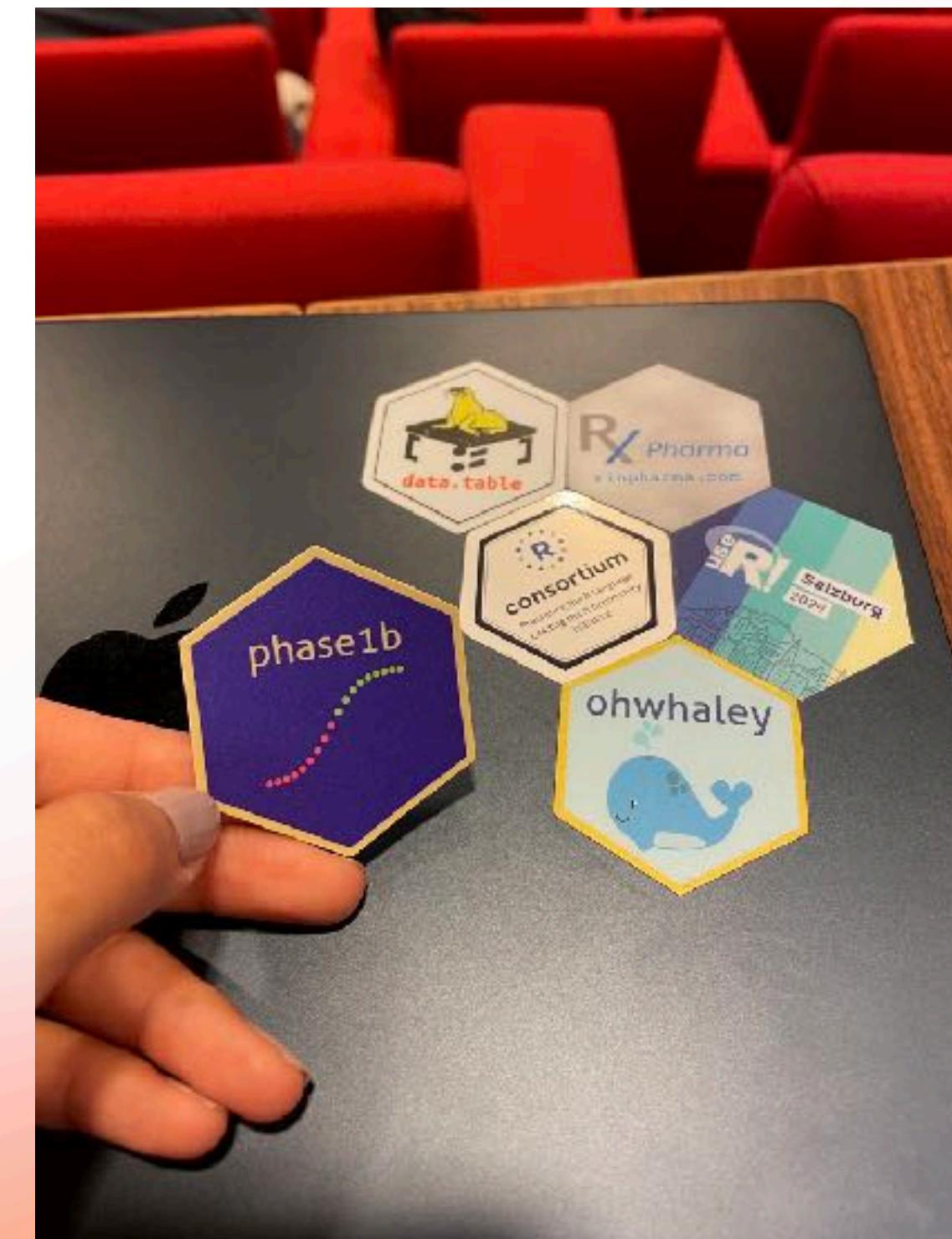
- [NEW CHAPTER/section] - How to self archive your article book communication-book #3808 opened 2 weeks ago by EstherPlomp 8 tasks
- Welcome! Onboarding Call - 28 Aug 2024 onboarding #3805 opened 3 weeks ago by Susana465
- Add information about Book Dash Local Hubs to Community Handbook book-dash-planning-committee community-handbook #3800 opened on Aug 13 by aleesteele 3 tasks
- Add guidance about using TTW vs "The Turing Way" in materials #3789 opened on Jul 15 by aleesteele 2 tasks
- [BUG] We don't have standard operating procedures for hosting the Community Forum sessions bug communications community events #3787 opened on Jul 12 by KirstieJane 11 tasks
- [NEW CHAPTER] - Creating & Executing a Community Sustainability Plan book #3785 opened on Jul 11 by Nolski 3 of 8 tasks

In 2023 when I participated in the event, quarto was their main documentation tool

Now you should check up and see if something has changed

Quarto opens new doors

Behind the doors, it's the great community



Quarto opens new doors

Behind the doors, it's the great community



The background features a minimalist design with abstract, flowing shapes. It consists of several layers of waves. The bottom layer is a large, solid orange shape that tapers to the right. Above it are two layers of smaller, overlapping shapes in shades of red and maroon. The top layer is a dark purple color.

what else?

Review the journey



Build something quick, then update it later

Gets easier and faster later on

You might be **helping each other** without realizing

Sometimes don't be afraid to **start again**

Chi Zhang • You
R developer | Biostatistician | Open Source | EHR RWD
11mo •

When you first try to add the fantastic `#webR` to `#quarto` extension (quarto-webr created by [James Balamuta, Ph.D.](#)) to an **existing** quarto website, you *might* have a stuck-in-loading HTML file when you click render.

If you check the troubleshooting doc, you'll see that you can change the channel-type option. This is where you add it in your qmd for a quick fix: (thanks to [Linh Nguyen](#) for pointing out!)

In this "Ready" webR embedded quarto page I've summarized what I did.

<https://lnkd.in/eMr2CzWc>

In the end, I recommend reading the official doc and tutorial created by the authors! This is a great tool that deserve to be used by so many.

#rstats

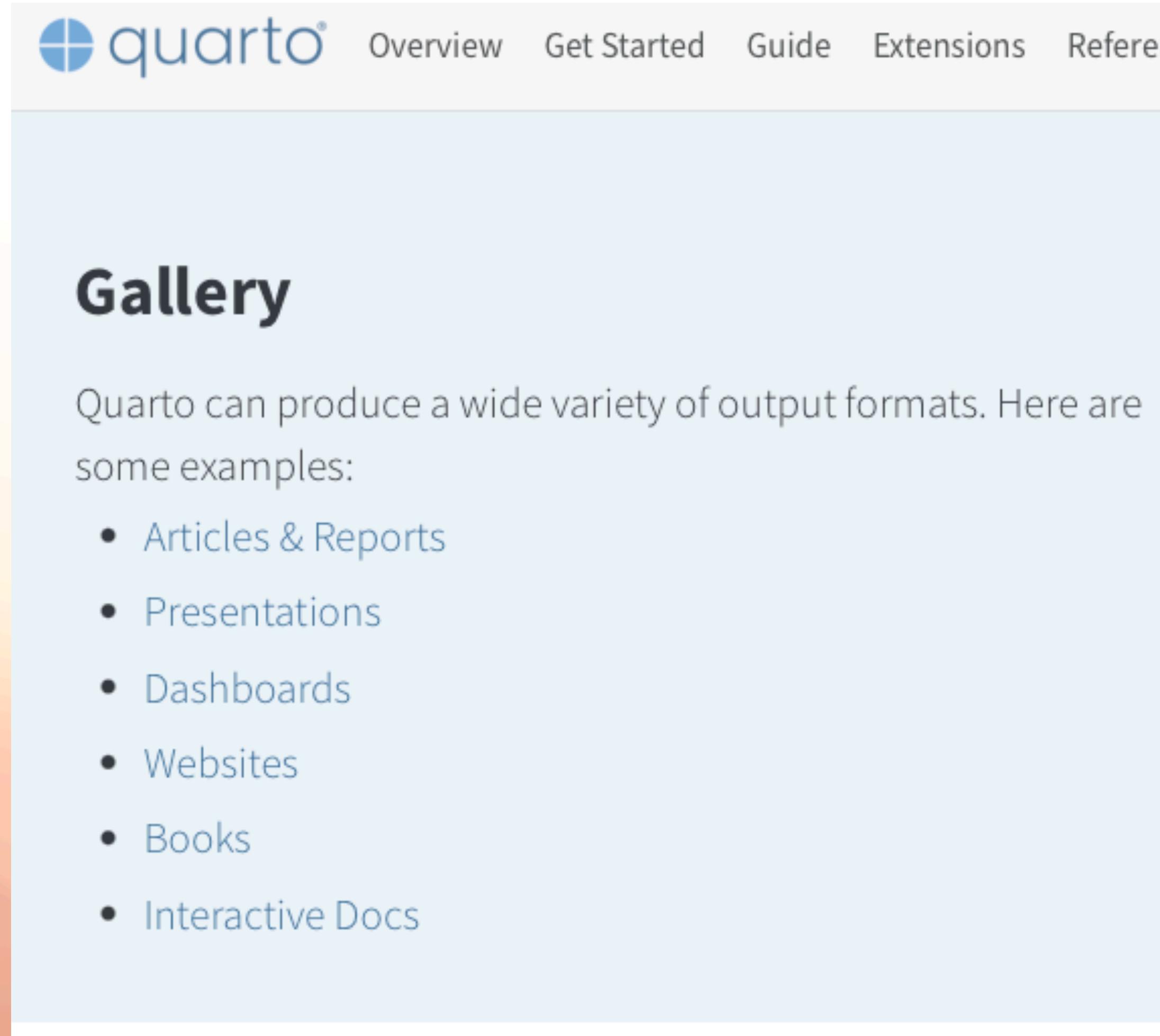
```
1 ---  
2 title: "Use WebR in your existing quarto website"  
3 description: |  
4   You might get stuck when you try to add the trending `webR` to quarto  
5   extension in your website. This is one way to fix it.  
6 author: "Chi Zhang"  
7 date: "2023-10-01"  
8 categories: [Quarto, Website]  
9 sidebar: false  
10 engine: knitr  
11 filters:  
12   - webR  
13   webR:  
14     channel-type: "post-message"  
15     format:  
16       html:  
17         toc: true  
18         toc-depth: 2  
19         code-fold: false  
20         code-tools: false  
21 ---
```

WEB STATUS
 Loading...
Loading webR...
1 1+1

99 2 comments • 4 reposts

Like Comment Repost Send

Other use cases I have not mentioned



The screenshot shows the Quarto website's navigation bar with links for Overview, Get Started, Guide, Extensions, and Reference. Below this, a large section titled "Gallery" is displayed. The text reads: "Quarto can produce a wide variety of output formats. Here are some examples:" followed by a bulleted list: "• Articles & Reports", "• Presentations", "• Dashboards", "• Websites", "• Books", and "• Interactive Docs".

I focus very much on **websites**. Rarely use the other functionalities

Reveal.js for presentations: I prefer old style where I can drag the figures around - but to show code, it's a good option

Parameterized reports

Interactivity: only used webR, currently no use-case for dashboards



What's trending now in quarto..

In 2023 Posit Conf, **webR** (WebAssembly)

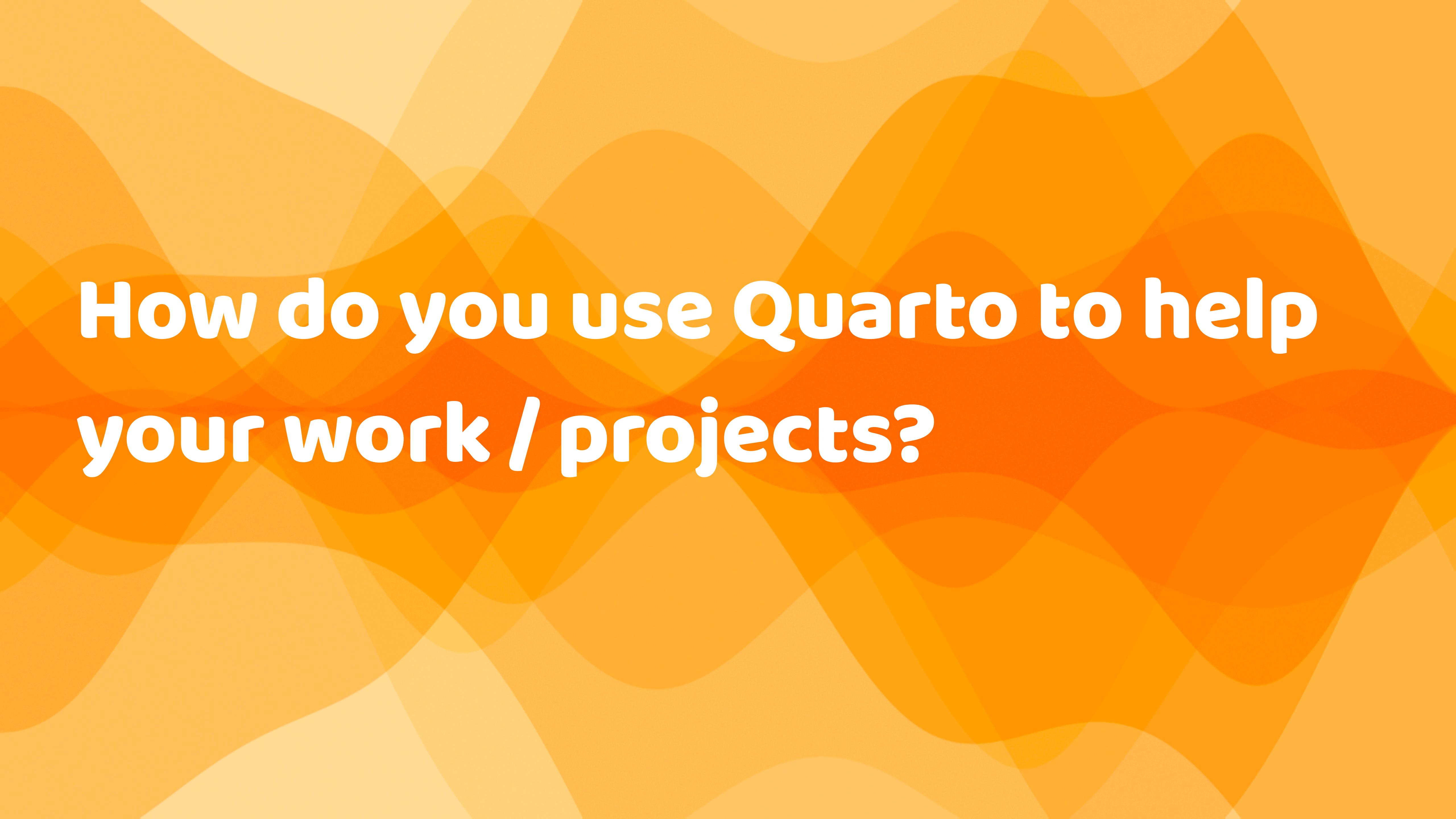
Apart from that, talks are mostly on use-cases (parameterized reports, publications)

2024 useR! Salzburg, **Typst** (for PDF), industry reporting and styling for Quarto reports

2024 Posit Conf, **Quarto-live**: supports both R and python code chunks to run interactively; allows set-up code; more options for visualization

Quarto **Dashboards**; Other extensions to make Quarto website more flexible, e.g.
closeread

Talks should be available on YouTube within the year!



How do you use Quarto to help
your work / projects?