

ETC5523: Communicating with Data

Week 4

Data Storytelling on the Web

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25th August 2020



Housekeeping

- Blog post 1 instructions are available now and due **Fri 4 Sep 11.55PM** on Moodle.



R Markdown

lecture-04suppA.Rmd

lecture-04suppA.html

```
---
```

```
title: "R Markdown for Literate Programming"
output: html_document
---
```

```
```{r setup, include = FALSE}
library(tidyTuesday)
library(tidyverse)
```

```{r data, include = FALSE}
Define colour palette for dots
pal <- c("#9FBCA5", "#52796F", "#354F52", "#2F
```

```
Read in data with {tidyTuesday}
throttles <- read_csv("https://raw.githubusercontent.com/
```



# Sharing your HTML webpage

- You can share your HTML webpage using RPubs.

The screenshot shows an RPubs document titled "ETC5523: Communicating with Data". The author is Emi Tanaka, and it was last updated 20 days ago. The document contains the following R code:

```
ftps <- 1.467 * cars$speed # convert to ft per second
seconds_to_stop <- cars$dist / ftps
```

Below the code, there are buttons for "Edit Details", "Delete", and "Comments (-)".

- There are a few caveats sharing via RPubs though:
  - The HTML webpage needs to be self-contained (so no external local file dependencies like css and js).
  - There is a banner on the top and the bottom.
  - The url has to be under the domain <https://rpubs.com>.



# R Markdown Website Example

- The ETC5523 course website is built using a "simple" R Markdown website.

The screenshot shows a website with a blue header bar. The header contains the text "ETC5523: Communicating with Data" on the left, and three navigation items on the right: "Home" (with a house icon), "Moodle" (with a book icon), and "Unit Guide" (with a document icon). To the far right of the header is a small circular icon with a white question mark inside. The main content area has a white background. At the top of this area, the text "ETC5523: Communicating with Data" is displayed. Below it, the word "Lecturers" is in blue, serving as a heading for a bulleted list. The list contains two items: "Emi Tanaka (Chief Examiner)" and "Stuart Lee". Further down, another blue heading "Tutor" is followed by a single item in a list: "Mitchell O'Hara-Wild".

- How is this different to a normal HTML output via `rmarkdown::html_document`?
- What is the difference between a **website** and a **webpage**?

## **Webpage**

- A *single* document written in HTML.

## **Website**

- A collection of webpages.
- The webpages usually share a common ***navigation*** bar (or tab), and possibly a common ***footer***.
- There are hyperlinks to other webpages that are nested under the same
  - domain, e.g. <https://numbat.space/>, or
  - subdomain, e.g. <https://cwd.numbat.space/>.

# R Markdown Website

# Download



If you know this lecture content already, download this file and study the plots in Rmd documents instead.



# Making an R Markdown Website Part 1/3

The minimum setup you need is a directory that contains:

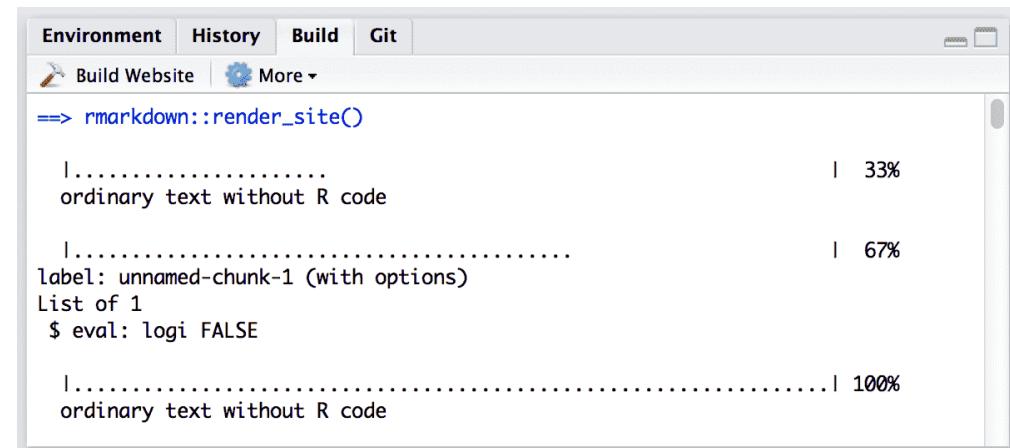
```
└── index.Rmd
└── _site.yml
```

where `_site.yml` contains

```
navbar:
title: "My Website"
left:
- text: "Home"
 href: index.html
```

You can build the website then by:

- `rmarkdown::render_site()`
- Or go to RStudio IDE and look under the Build tab:





# Making an R Markdown Website Part 2/3

By default the output is in `_site` folder:

```
├── index.Rmd
├── _site.yml
└── _site
 ├── index.html
 └── site_libs
```

You modify the output directory in the `_site.yml`

```
output_dir: "docs"
navbar:
 title: "My Website"
 left:
 - text: "Home"
 href: index.html
```

You can add more webpages:

```
├── index.Rmd
├── post2.Rmd
├── _site.yml
└── _site
 ├── index.html
 ├── post2.html
 └── site_libs
```

```
output_dir: "docs"
navbar:
 title: "My Website"
 left:
 - text: "Home"
 href: index.html
 - text: "Post"
 href: post2.html
```



# Making an R Markdown Website Part 3/3

You can include common elements  
`_site.yml`

```
output_dir: "docs"
navbar:
 title: "My Website"
 left:
 - text: "Home"
 href: index.html
 - text: "Post"
 href: post2.html
output:
 html_document:
 theme: cosmo
 include:
 after_body: footer.html
 css: styles.css
```

Or have own output options which get merged with common options:

`post2.Rmd`

```

output:
 html_document:
 theme: darkly

```

..content..

LIVE DEMO

For more information see  
**R Markdown: The  
Definitive Guide**

# Sharing on the web with GitHub Pages

1. If your GitHub username is called `username` then make a GitHub repo called `username.github.io`.
  2. Or if you already have a `username.github.io`, then make a GitHub repo called say `myweb`.
- Push your directory to your Github repo.
  - Go to your GitHub repo settings and enable "GitHub Pages".
  - Your website will be available with url:
    1. <http://username.github.io> or
    2. <http://username.github.io/myweb>

- Directory structure to push to your GitHub repo:

## Version 1

```
├── index.html
├── ...
└── ...
```

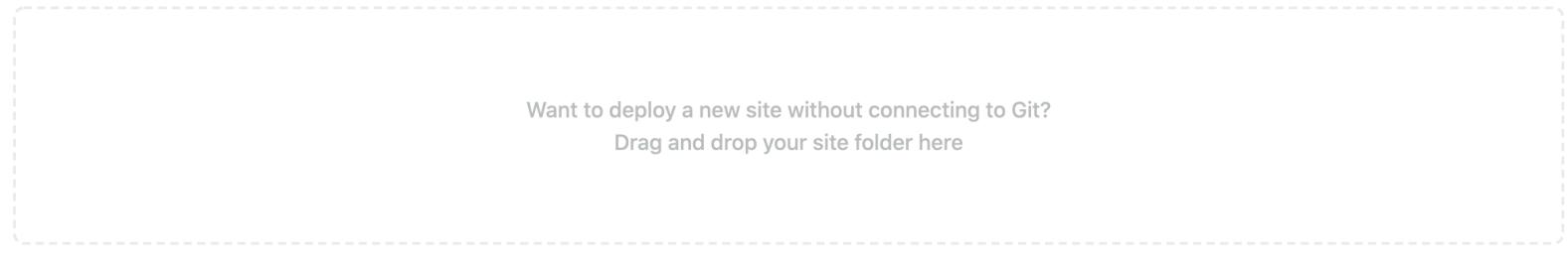
## Version 2

```
├── ...
└── docs
 ├── index.html
 └── ...
```

LIVE DEMO

# ◆ Sharing on the web with Netlify

- Go to <https://app.netlify.com> and log in
- Drag and drop your folder which contains the `index.html` to:



- Do go to Site settings > Change site name for a more sensible domain name.

LIVE DEMO



## Exercise

- Unzip and rename \_post2.Rmd to post2.Rmd
- Include post2.Rmd on the website.
- Try including \_post1.Rmd. Anything you notice?
- Get your website on a public domain.

*Please help each other.*

15 : 00

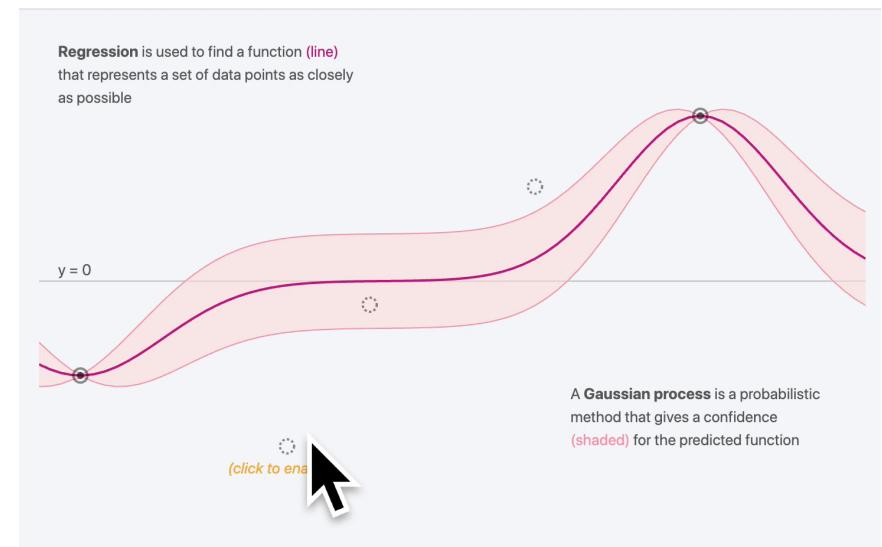
`distill::distill_article`



- Distill is a scientific journal on machine learning established in March 2017.
- Traditional scientific articles are focused on a *PDF* article.
- But Distill is *HTML based* so you can incorporate interactive visualisations.

## A Visual Exploration of Gaussian Processes

How to turn a collection of small building blocks into a versatile tool for solving regression problems.



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PUBLISHED

April 2, 2019

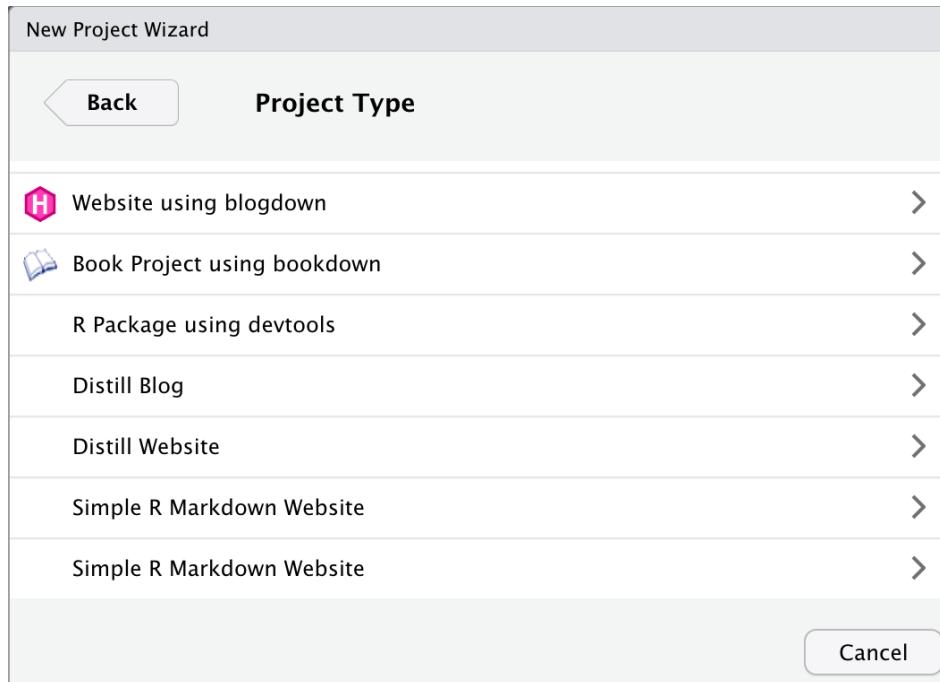
DOI

10.23915/distill.00017

Source: <https://distill.pub/2019/visual-exploration-gaussian-processes/>

# distill with R Markdown

- distill R-package (originally called radix) creates a HTML output that looks like Distill
- You can get started at RStudio > New Directory > Distill Website (or Distill Blog)





- Reader-friendly typography that adapts well to mobile devices.
- Features essential to technical writing like LaTeX math, citations, and footnotes.
- Flexible figure layout options (e.g. displaying figures at a larger width than the article text).
- Attractively rendered tables with optional support for pagination.

—Allaire, et al. (2018, Sept. 10). Distill for R Markdown. Retrieved from <https://rstudio.github.io/distill>



## Resources

- Distill for R Markdown: Creating a Website
- Building a blog with distill by Thomas Mock
- Teaching in Production by Alison Hill

# blogdown

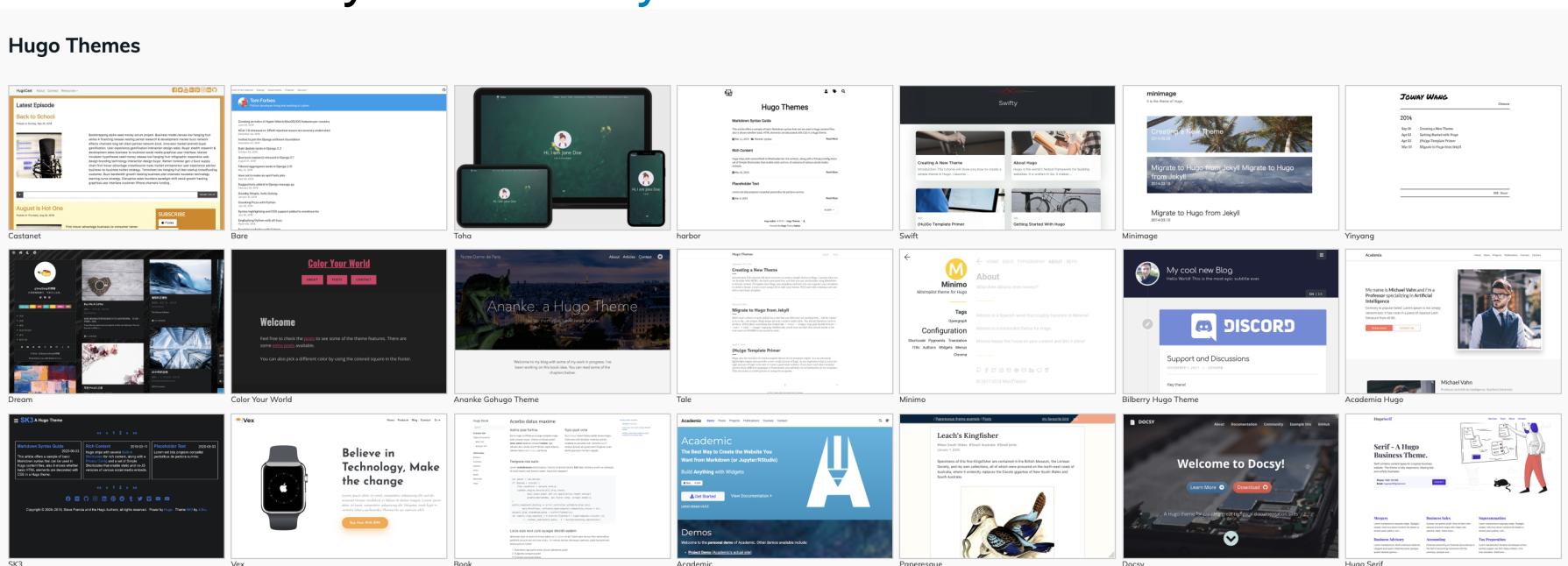


# Hugo



# Making a website with Hugo

- Hugo is a free, open-source static site generator written under the hood with the Go programming language
- It is *lightning fast* to build the website.
- It supports Markdown with Hugo's default rendering engine Blackfriday (instead of Pandoc).
- There are many community contributed themes:



# Academic Hugo Theme

- Academic is one of the most well-developed and hugely popular Hugo themes.
- To get started with command line use

```
blogdown::new_site(theme = "gcushen/hugo-academic")
```

- Or go to RStudio > New Project > Website using blogdown and change the theme to gcushen/hugo-academic.
- Or clone your week 4 GitHub classroom repo which contains the skeleton website for Academic Hugo.

LIVE DEMO



# The basics of making your blog

## Main Steps

- Personalise the contents of config.toml.
- **Serve site:**
  - Go to Addins > Serve Site
  - Or from the console type and push enter:  
`blogdown::serve_site()`
- **Making a new post:** go to Addins > New Post and fill out the details as needed.

There are many other features available but above are enough for you to get started.



# Deploying your blog

```
└── academic-hugo-template.Rproj
└── assets
└── config
└── config.toml
└── content
 ├── authors
 ├── home
 └── post
└── index.Rmd
└── public
 ├── ...
 ├── index.html
 └── ...
└── resources
└── static
└── themes
 └── hugo-academic
```

- Push your blogdown project to a GitHub repo.
- Go to <https://app.netlify.com/> and select "New site from Git".
- Select your repo and deploy your site.
- By default, this deploys the **public** folder in your project folder.
- ⚠ You should never change anything in the public folder.

LIVE DEMO



## Resources

- [blogdown: Creating Websites with R Markdown by Xie, Thomas & Hill](#)
- [Making Websites in R Markdown by Alison Hill](#)



# Get started with making

- Your own profile website
  - add your bio
  - add your skillsets
  - add links to all your other profiles
  - add contact details
- Your own blog:
  - summarising what you have learnt
  - learning about a new R package
  - or anything else!

30 : 00

# Today's main lessons

- ✓ Make an R Markdown Website
- ✓ Make a `distill` website, blog or article
- ✓ Make a `blogdown`
- ✓ How to get your website on the public domain

Note: `blogdown` is considerably harder so stick with an R Markdown website if it's too much!

# That's it!



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