Presentations

And working with xaringan and xaringanthemer

June 17th, 2022

Begin with background and motivation

Every presentation has a **story**:

- What is the motivation? Why should people care about your work?
- You want to build up want your work is trying to address

Example nflWAR talk from 2017:

- Do **NOT** begin with: "We're introducing WAR for NFL!"
- Instead begin with current state of NFL analytics and need for better, reproducible player level-metrics

Do **NOT** include an outline slide!

- Your presentation should flow naturally

Describing the data

You want to provide a general overview of your dataset:

- What are your observations? i.e., what does each row of your dataset represent?
- What are the relevant variables / features? i.e., what are the columns of interest?
    - Be careful though with many variables - avoid just listing everything!
    - Simplify by describing groups of variables together

Use examples - makes your data explicit and concrete for the audience

- But Do **NOT** print out raw `R` console output!
- Use text or a clean formatted table (via `knitr`, `DT`, `gt`)

Introducing and describing methods

- Prior to presenting results, you want to clearly state any transformations and methods used in the analysis
- Your presentation should provide the general steps for someone to replicate your work
    - e.g., Used complete-linkage hierarchical clustering with [INSERT VARIABLES], determined K number of clusters by [INSERT REASON]
    - e.g., Modeled [INSERT RESPONSE VARIABLE] as a function of [INSERT EXPLANATORY VARIABLES]
- For more complicated methods, you'll want to provide a brief review of the methodology
- If introducing new methodology: **walk through the steps clearly**
- **Always justify your choice of methodology**
    - Why you used a flexible tree-based model over linear regression

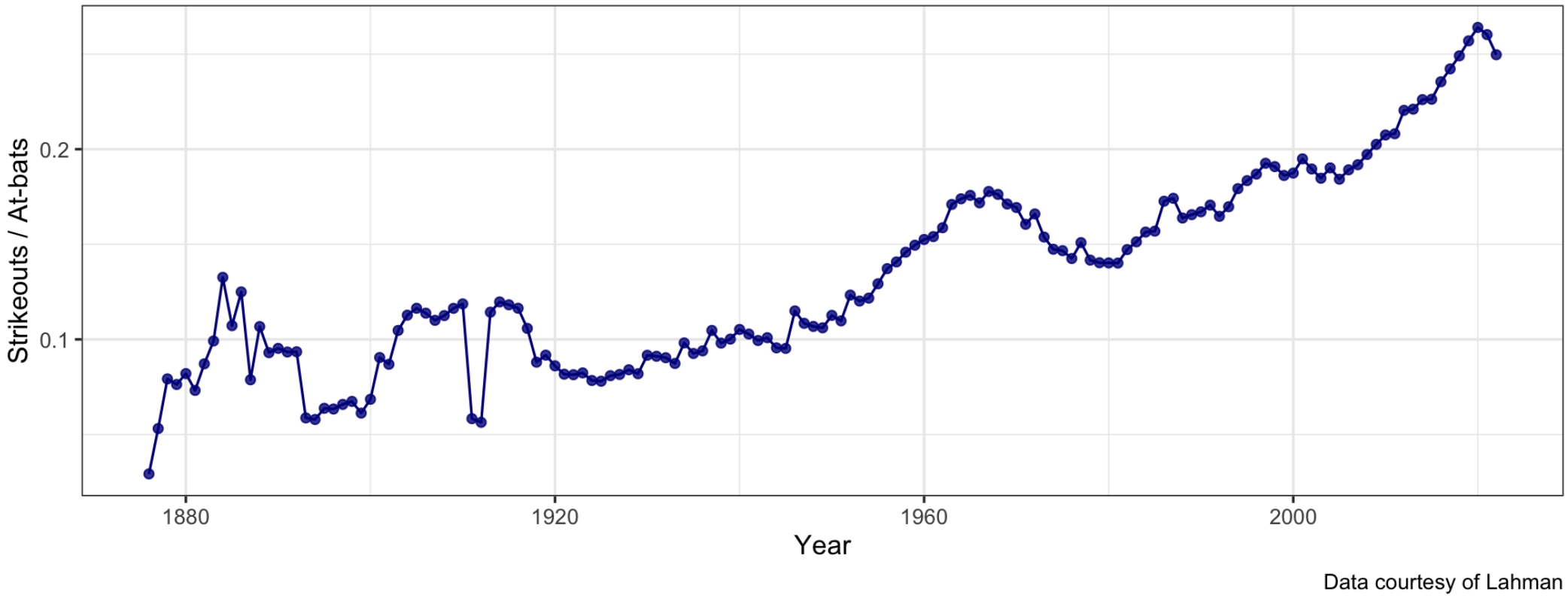
Presenting results

- Use the **assertion-evidence** model
- **Assertion**: title of the slide should be the key takeaway in brief sentence form
  - Indicates the point of the visualization or whatever means used to display the results
- **Evidence**: the body of the slide containing the results
  - Display of the results in some format that is simple to explain and understand
- Limit the amount of text in your **Evidence** portion - brief statements with important context
- Treat the **Assertion** as the title of your **Evidence**
  - Plot titles are then redundant and not necessary with an effective assertion

Assertion

Evidence

MLB strikeout rates have been increasing throughout MLB's history



(Explain the `aes` of your graph - what is each axis, color, shape, etc referring to? And what is the unit scale?)

Discussion (and ending a presentation)

- Conclude with a recap of the main points of your work
- Then **point out limitations** and indicate a **direction for the next steps**
- Either end with the **Discussion** slide (or **Acknowledgements** but this is sometimes placed at the beginning)
- Never end a presentation with lone *Thank you* slide!
  - Want the audience to focus on the final points in your **Discussion** slide
- Include back-up **Appendix** slides with additional info, ready for questions
- Slides for **References** should not be displayed during your talk
  - Their purpose is just for sharing with others
  - Alternative option: include references directly on slides either in text or via footnotes[1]

[1] Like this...

Additional tips and reminders

Use pauses effectively to highlight points and explain steps

- Showing all of your text at once can overwhelm your audience

But don't be ridiculous

- Do **NOT** introduce too much notation at once
- **Repetitive language and usage of words are useful and reminders for the audience**
    - Use consistent language and terminology throughout the talk

Know your audience!

How do we make presentations?

Use `xaringan` and `xaringanthemer`

- Install both packages: `xaringan` and `xaringanthemer`
- Create a new presentation using a template
- View in-progress slides with the **Infinite Moon Reader** addin for RStudio
- More options with xaringanExtra!

Check out public resources:

- Check out Alison Hill's Meet xaringan presentation
- Chapter 7 of free online `rmarkdown` book by its author Yihui Xie
- The rest of these slides are taken from the `xaringanthemer` template in RStudio
- And google for more examples

Typography

Text can be **bold**, *italic*, ~~strikethrough~~, or `inline code`.

Link to another slide.

Lorem Ipsum

Dolor imperdiet nostra sapien scelerisque praesent curae metus facilisis dignissim tortor. Lacinia neque mollis nascetur neque urna velit bibendum. Himenaeos suspendisse leo varius mus risus sagittis aliquet venenatis duis nec.

- Dolor cubilia nostra nunc sodales
- Consectetur aliquet mauris blandit
- Ipsum dis nec porttitor urna sed

Colors

- Text Color
- Header Color
- Link Color
- **Bold Color**
- `inline code color`

Big Topic or Inverse Slides

Slide Headings

Sub-slide Headings

Bold Call-Out ####

This is a normal paragraph text. Only use header levels 1-4.

Possible, but not recommended #####

Definitely don't use h6 ######

Topic Changing Interstitial

```
class: inverse center middle
```

Blocks

Blockquote

> This is a blockquote following a header.
>
> When something is important enough, you do it even if the odds are not in your favor.

Blocks

Code Blocks

R Code

```
ggplot(gapminder) +
  aes(x = gdpPercap, y = lifeExp, size = pop, color = country) +
  geom_point() +
  facet_wrap(~year)
```

JavaScript

```
var fun = function lang(l) {
  dateformat.i18n = require('./lang/' + l)
  return true;
}
```

Blocks

More R Code

```
dplyr::starwars %>% dplyr::slice_sample(n = 4)
```

Blocks

```
cli::cli_alert_success("It worked!")
```

```
## ✔ It worked!
```

```
message("Just a friendly message")
```

```
## Just a friendly message
```

```
warning("This could be bad...")
```

```
## Warning: This could be bad...
```

```
stop("I hope you're sitting down for this")
```

```
## Error in eval(expr, envir, enclos): I hope you're sitting down for this
```

Tables

```
tibble::as_tibble(mtcars)
```

```
## # A tibble: 32 × 11
##      mpg   cyl  disp    hp  drat    wt  qsec    vs    am  gear  carb
##    <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl>
##  1  21       6  160    110  3.9   2.62  16.5     0     1     4     4
##  2  21       6  160    110  3.9   2.88  17.0     0     1     4     4
##  3  22.8     4  108     93  3.85  2.32  18.6     1     1     4     1
##  4  21.4     6  258    110  3.08  3.22  19.4     1     0     3     1
##  5  18.7     8  360    175  3.15  3.44  17.0     0     0     3     2
##  6  18.1     6  225    105  2.76  3.46  20.2     1     0     3     1
##  7  14.3     8  360    245  3.21  3.57  15.8     0     0     3     4
##  8  24.4     4  147.    62  3.69  3.19  20       1     0     4     2
##  9  22.8     4  141.    95  3.92  3.15  22.9     1     0     4     2
## 10  19.2     6  168.   123  3.92  3.44  18.3     1     0     4     4
## # … with 22 more rows
```

Tables

```
knitr::kable(head(mtcars), format = 'html')
```

	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
Mazda RX4	21.0	6	160	110	3.90	2.620	16.46	0	1	4	4
Mazda RX4 Wag	21.0	6	160	110	3.90	2.875	17.02	0	1	4	4
Datsun 710	22.8	4	108	93	3.85	2.320	18.61	1	1	4	1
Hornet 4 Drive	21.4	6	258	110	3.08	3.215	19.44	1	0	3	1
Hornet Sportabout	18.7	8	360	175	3.15	3.440	17.02	0	0	3	2
Valiant	18.1	6	225	105	2.76	3.460	20.22	1	0	3	1

Tables

```
DT::datatable(head(mtcars), fillContainer = FALSE, options = list(pageLength = 4))
```

Show 4 entries Search:

	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
Mazda RX4	21	6	160	110	3.9	2.62	16.46	0	1	4	4
Mazda RX4 Wag	21	6	160	110	3.9	2.875	17.02	0	1	4	4
Datsun 710	22.8	4	108	93	3.85	2.32	18.61	1	1	4	1
Hornet 4 Drive	21.4	6	258	110	3.08	3.215	19.44	1	0	3	1

Showing 1 to 4 of 6 entries Previous 1 2 Next

Lists

Here is an unordered list:

- Item foo
- Item bar
- Item baz
- Item zip

And an ordered list:

1. Item one
2. Item two
3. Item three
4. Item four

Lists

And a nested list:

- level 1 item
  - level 2 item
  - level 2 item
  - level 3 item
  - level 3 item
- level 1 item
  - level 2 item
  - level 2 item
  - level 2 item
- level 1 item
  - level 2 item
  - level 2 item
- level 1 item

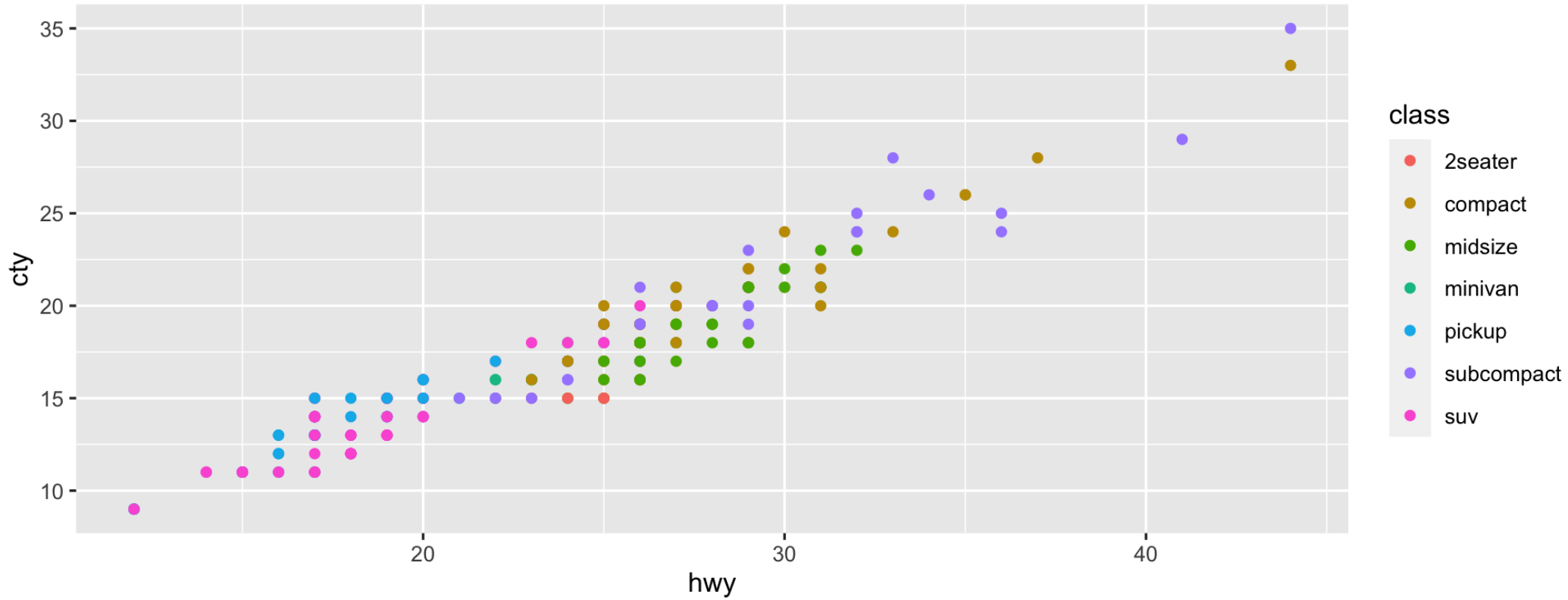
Lists

Nesting an ol in ul in an ol

- level 1 item (ul)
    1. level 2 item (ol)
    2. level 2 item (ol)
        - level 3 item (ul)
        - level 3 item (ul)
- level 1 item (ul)
    1. level 2 item (ol)
    2. level 2 item (ol)
        - level 3 item (ul)
        - level 3 item (ul)
        1. level 4 item (ol)
        2. level 4 item (ol)
        - level 3 item (ul)
        - level 3 item (ul)
- level 1 item (ul)

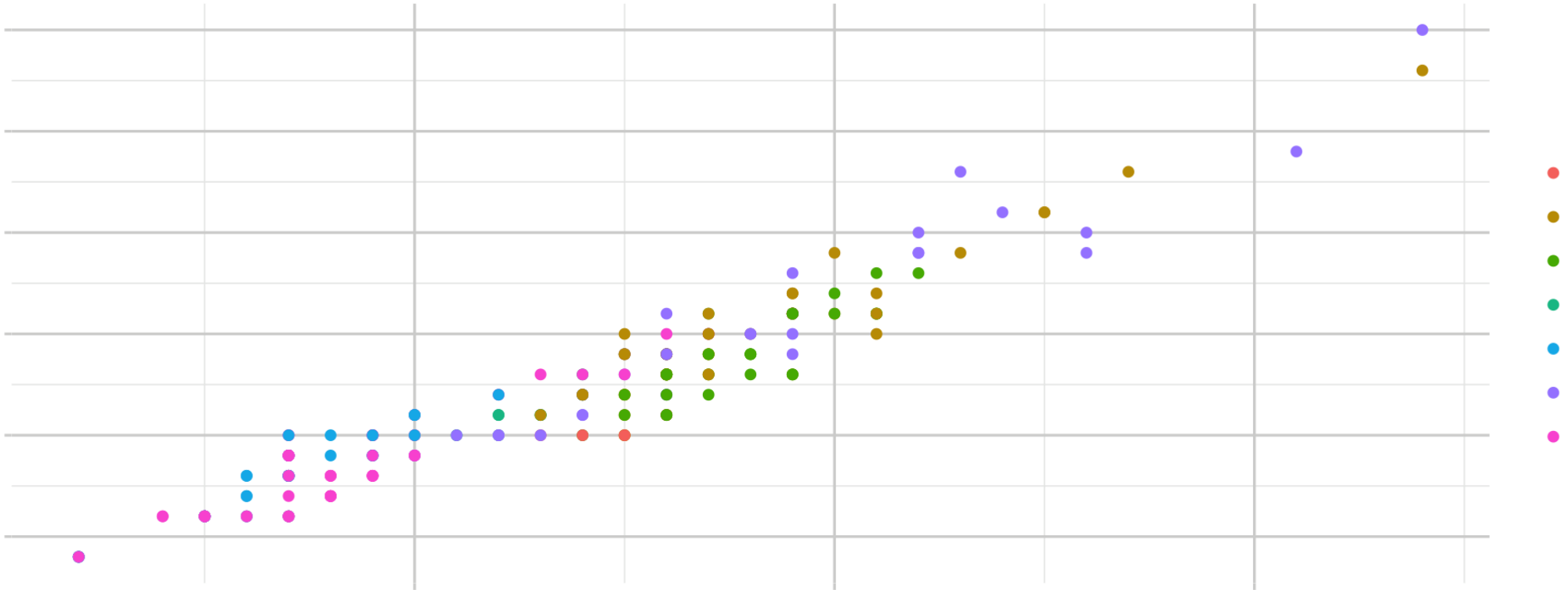
Plots

```
library(ggplot2)
(g <- ggplot(mpg) + aes(hwy, cty, color = class) + geom_point())
```



Plots

```
g + xaringanthemer::theme_xaringan(text_font_size = 16, title_font_size = 18) +
  ggtitle("A Plot About Cars")
```



Square image

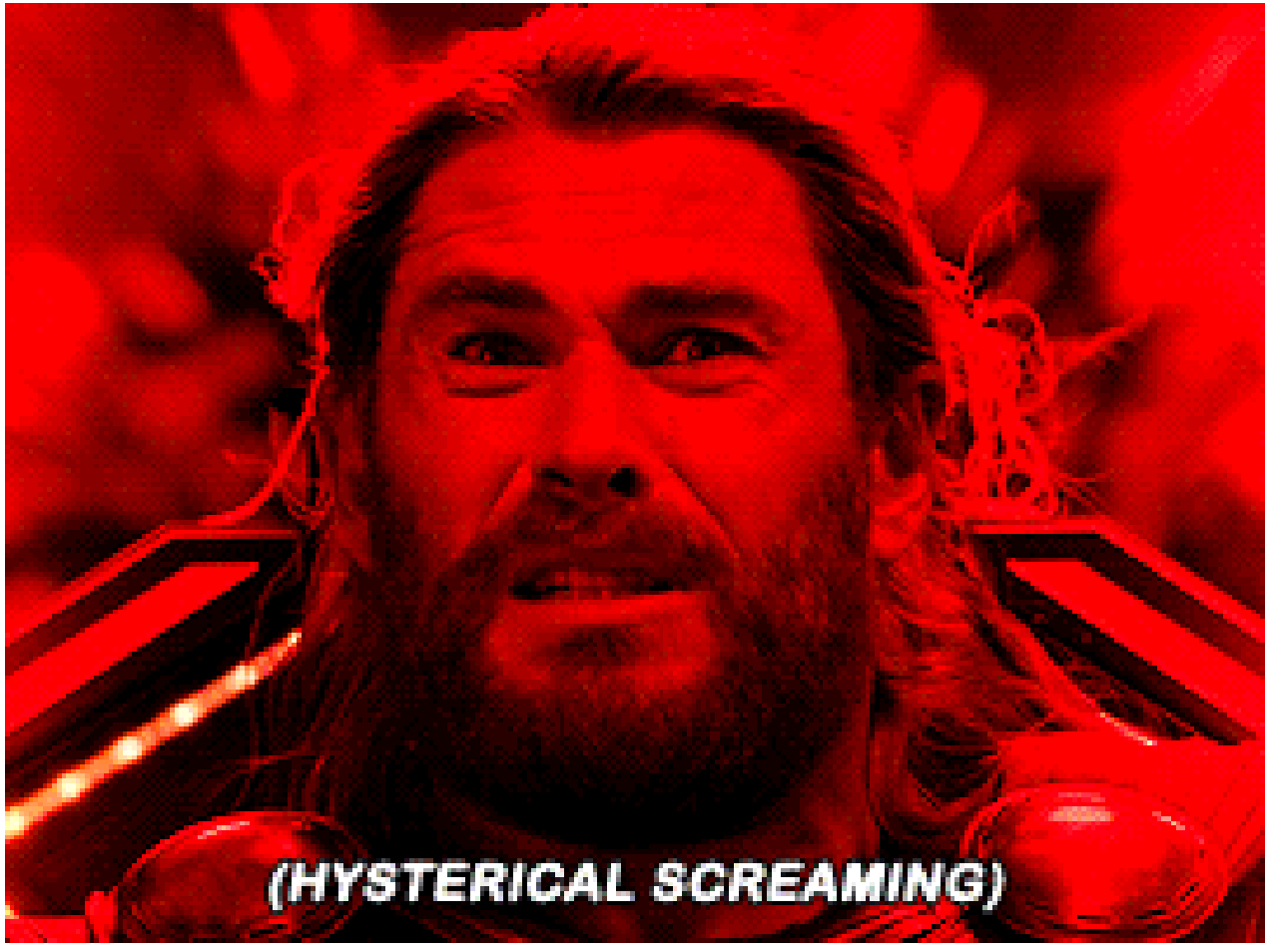
GitHub Octocat

Wide image

Wide images scale to 100% slide width

Two images

Alternatively `include_graphics`



Definition lists can be used with HTML syntax.

Name
: Godzilla

Born
: 1952

Birthplace
: Japan

Color
: Green

Thanks!

Slides created via the R packages:

xaringan
gadenbuie/xaringanthemer

The chakra comes from remark.js, **knitr**, and R Markdown.