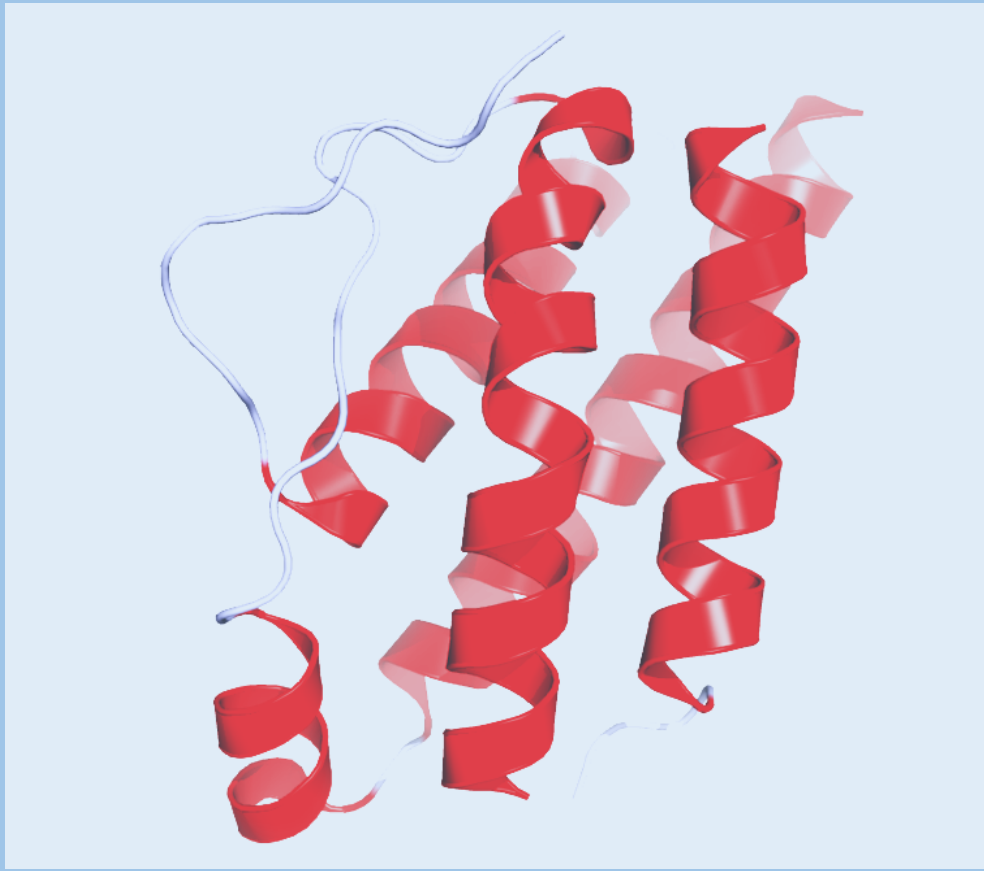

Predictshine
or
How I learned to
stop worrying and
make an R package
Tom Liptrot
The Christie Hospital

IL-2 (Aldesleukin)

Renal-cell cancer treatment

High doses give high toxicity

Dosen’t work for everyone



glm(), and predict()

```
fit = glm(cr ~ hist_a +
   met_sites2 + cycle_1_dose + six_month,
     data  = caix, family = binomial())
```

glm(), and predict()

```
predict(mv_cr_2, newdata = data.frame(
  cr = FALSE,
  met_sites2 = factor('3+',
      levels = c("1","2","3+")),
  hist_a = factor('FALSE',
      levels = c("FALSE", "TRUE")),
  cycle_1_dose = 20,
   six_month = factor(1, levels = 0:1)))
>0.56
```

Shiny

by
Rstudio

A web application framework for R

Turn your analyses into interactive web applications

No HTML, CSS, or JavaScript knowledge required

https://tomliptrot.shinyapps.io/IL2_response

ui.r

```
radioButtons("hist_a",
   label = h3("Alveolar favourable"),
   choices = list("TRUE" , 'FALSE'),
   selected = 'TRUE')

sliderInput("cycle_1_dose",
   label = h3("cycle 1 dose"),
   min = 10,max = 25, value = 15)
```

server.r

```
make_newdata <- function( hist_a,
cycle_1_dose){
   new = data.frame(
        hist_a = factor(hist_a,
           levels = c("FALSE", "TRUE")),
        cycle_1_dose = cycle_1_dose  )

   return(new)
       }
```

predictshine

Prediction with shiny

An interactive version of `predict()` that is simple to use

```
predictshine(fit)
```

Dynamic User Interface

```
shinyApp(
ui =
   uiOutput("ui")
   plotOutput('pred_plot')

server = function(input, output) {
output$ui <- renderUI({inputs_list
})
```

S3 Methods

```
model_input.factor
model_input.logical
model_input.numeric
model_input.poly(todo)
```

S3 Methods

```
get_prediction.glm
get_prediction.lm
get_prediction.coxph

plot.prediction_glm
plot.prediction_lm
```

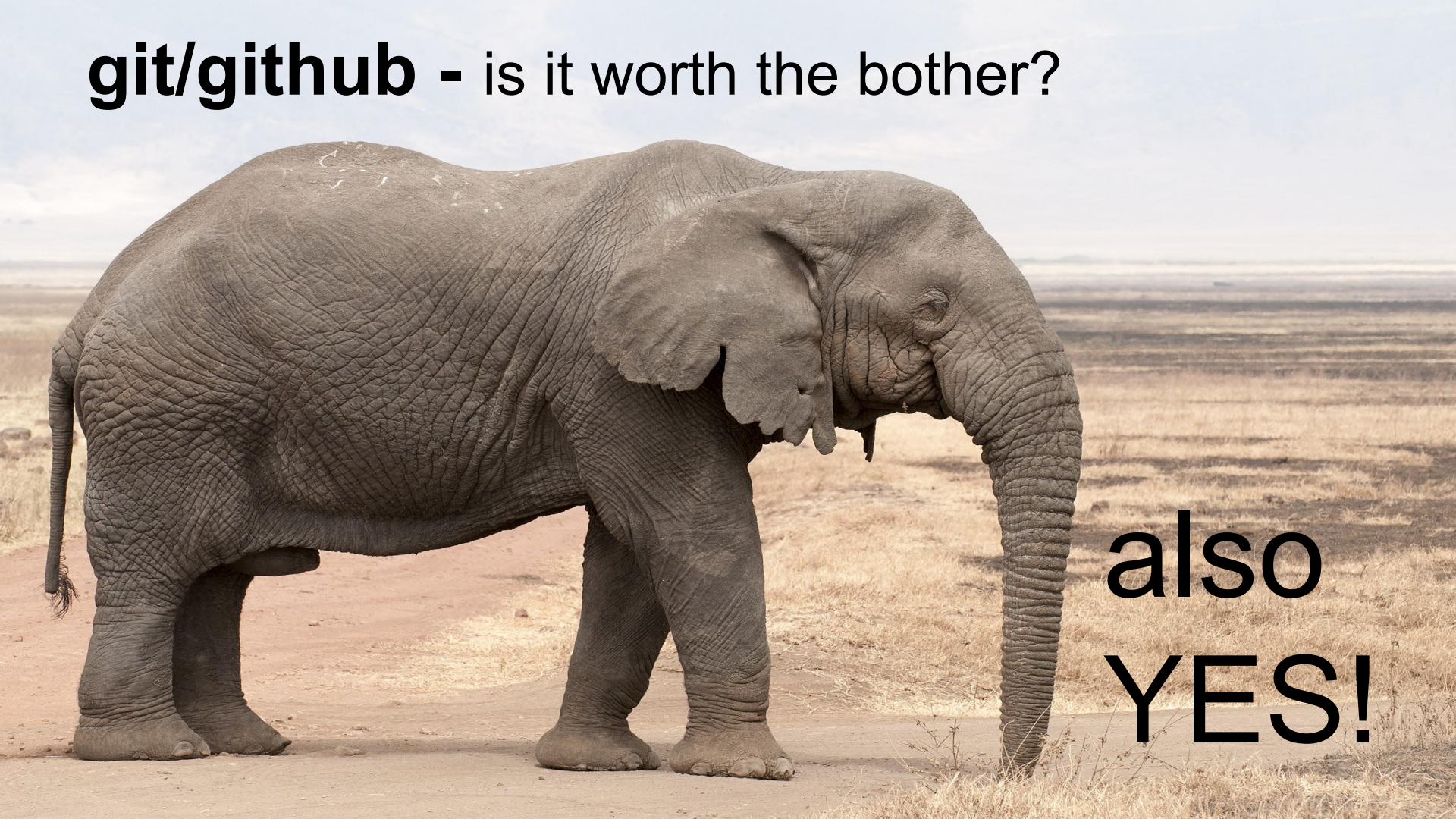
Packages - is it worth the bother?

5 Steps to make an R package

1. `install devtools and Rtools`
2. `devtools::create('path', 'name')`
3. save R scripts in the /R folder
4. `devtools::use_package("shiny")`
5. `devtools::load_all()`
6. `devtools::install()`

see here http://r-pkgs.had.co.nz/

git/github - is it worth the bother?



install predictshine from github

```
install_github('tomliptrot/predictshine')

library(predictshine)
```

see https://github.com/tomliptrot/predictshine

Demo

```
library(predictshine)

data(well_being)

lm_1 = lm(overall_sat ~   age2  * region +   sex  + married +  age2 * eductaion + ethnicity  + health  , data =
well_being)


predictshine(lm_1,
       page_title = 'Happiness in the UK',
       variable_descriptions = c('Age', "Region", 'Sex','Marital status',
              "What is the highest level of qualification?",
              "Ethnicity White/Other",
              "How is your health in general?" ),
       main = 'Overall, how satisfied are you with your life nowadays?',
       xlab =  'predicted score out of 10',
       description = p('Alter variables to get predicted overall life satisfaction (out of 10).
              This model is made using data from the 1,000 respondents of the ONS Opinions Survey,
              Well-Being Module, April 2011'))
```

Sharing

send r file

LAN using runApp(

shinyapps.io - still working on this

https://tomliptrot.shinyapps.io/international_jobs/

Thanks

`predictshine` is my first R package

learnt a lot - thanks to R user group

please try it out!

https://github.com/tomliptrot/predictshine

tomliptrot@gmail.com