

Let's Go Bananas

**And build an AI
model with Shiny**

by Peter Solymos

Intro



PETER SOLYMOS

**Data scientist @ E Source
Formerly @ ABMI/UofA
Founder of Analythium.io**

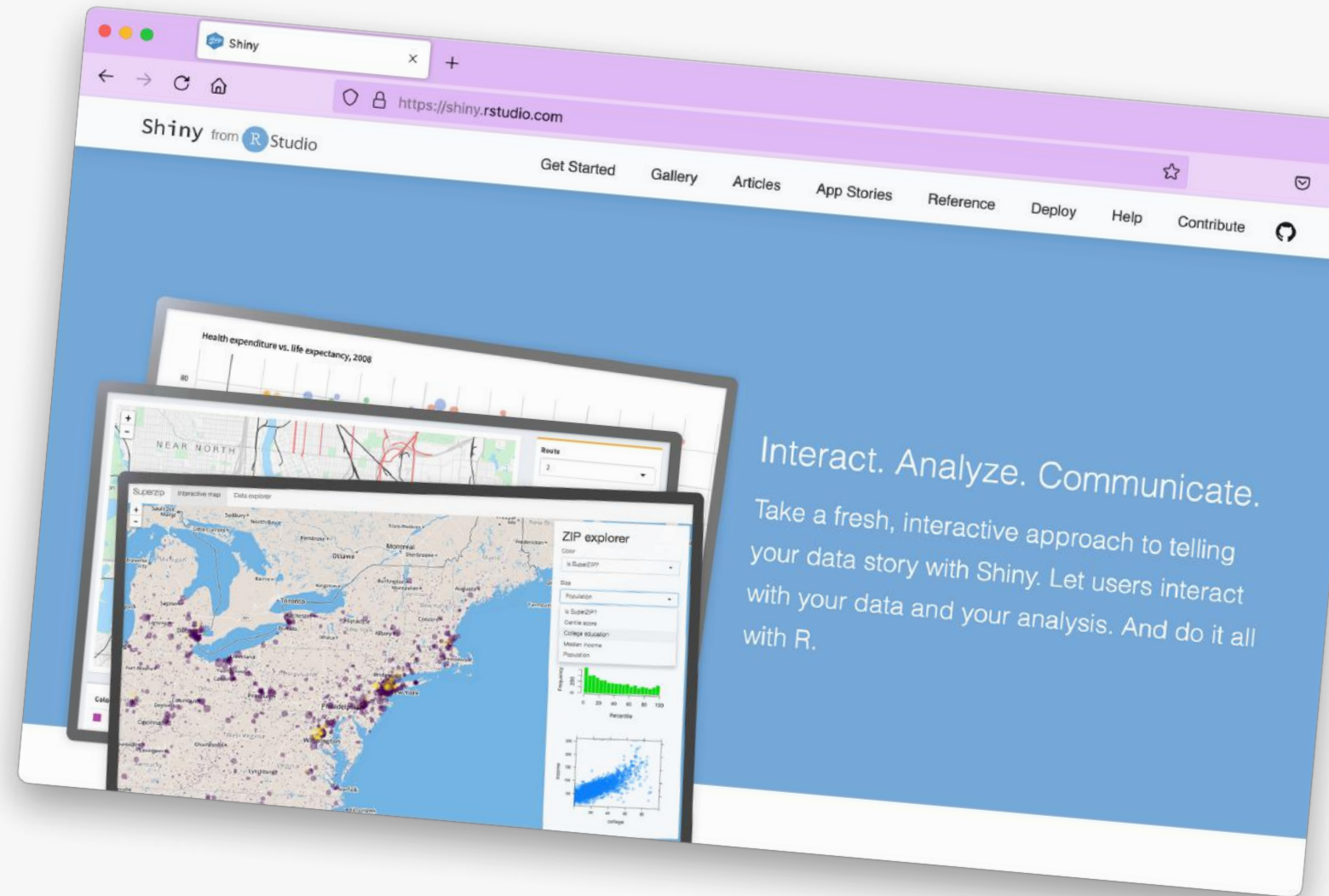
Shiny

What is Shiny?

Web Application Framework for R

Makes it incredibly easy to build interactive web applications with R.

Automatic "reactive" binding between inputs and outputs and extensive prebuilt widgets make it possible to build beautiful, responsive, and powerful applications with minimal effort.



What is Shiny?

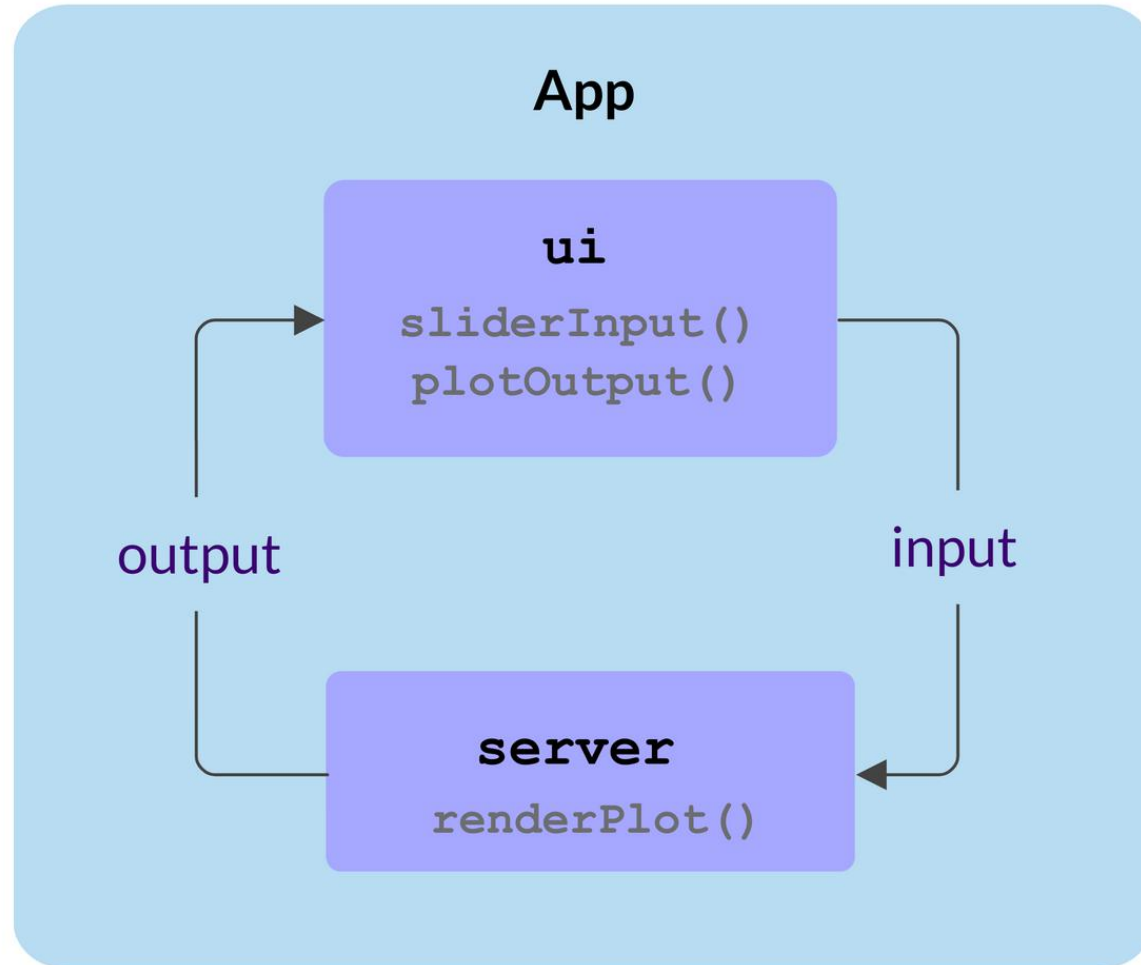


Client

request

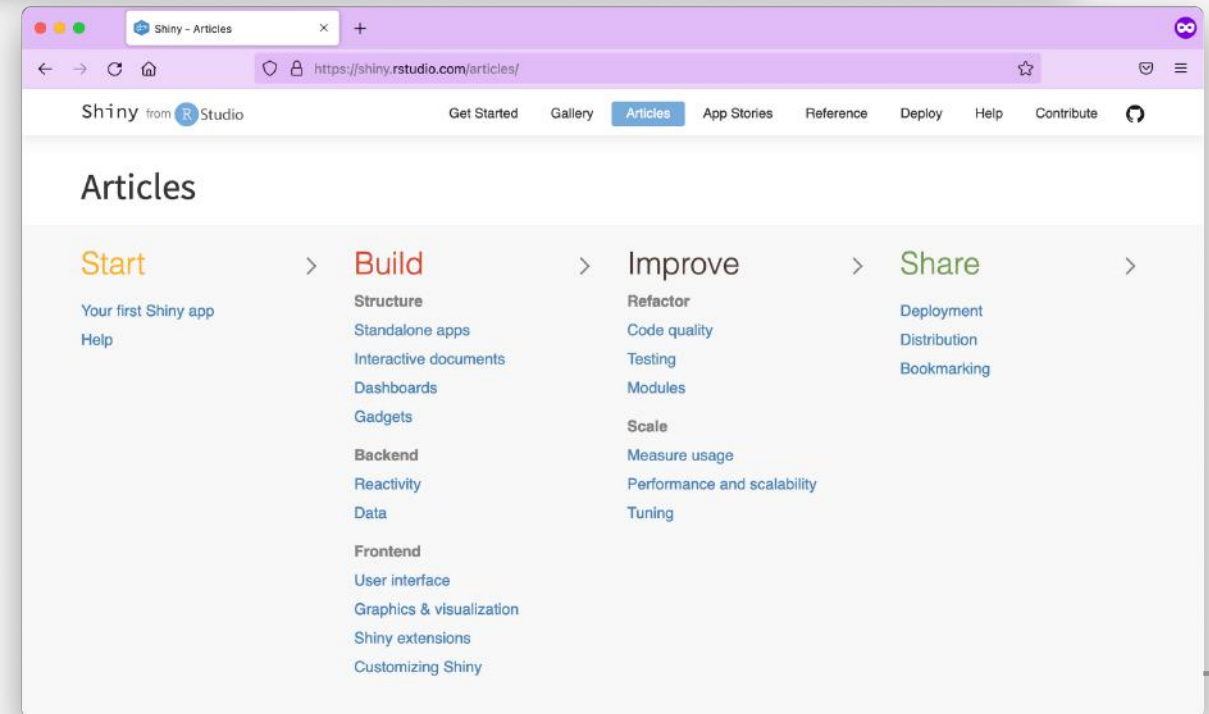
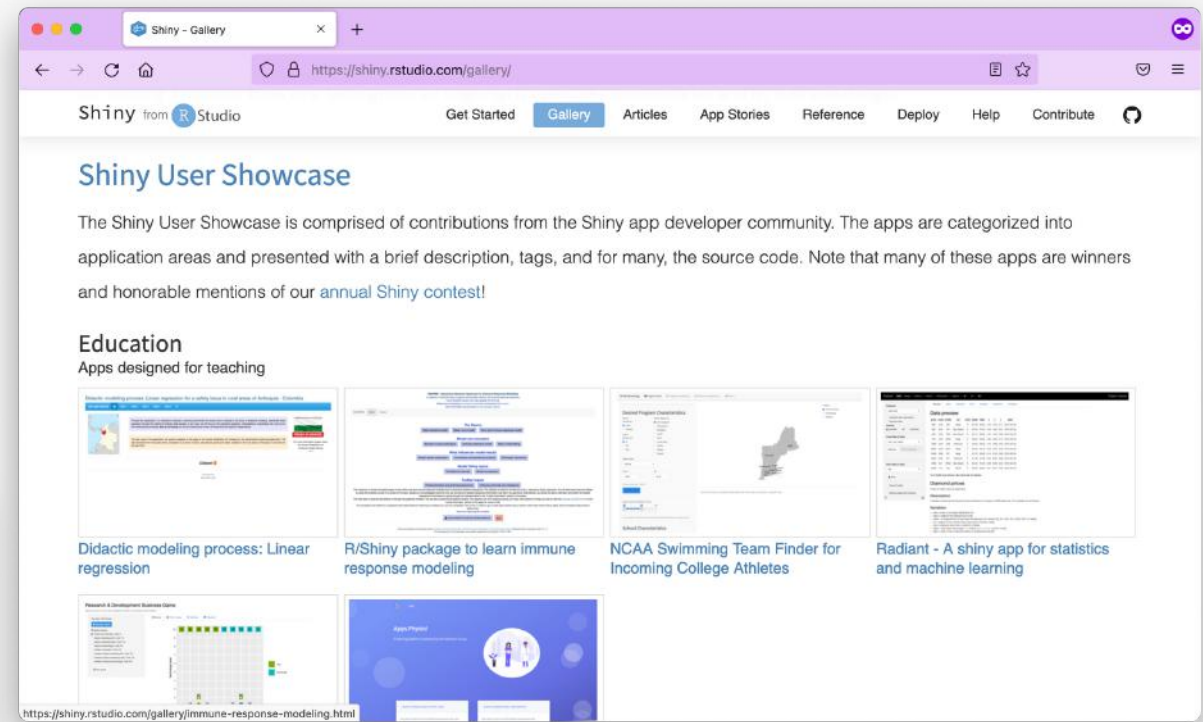
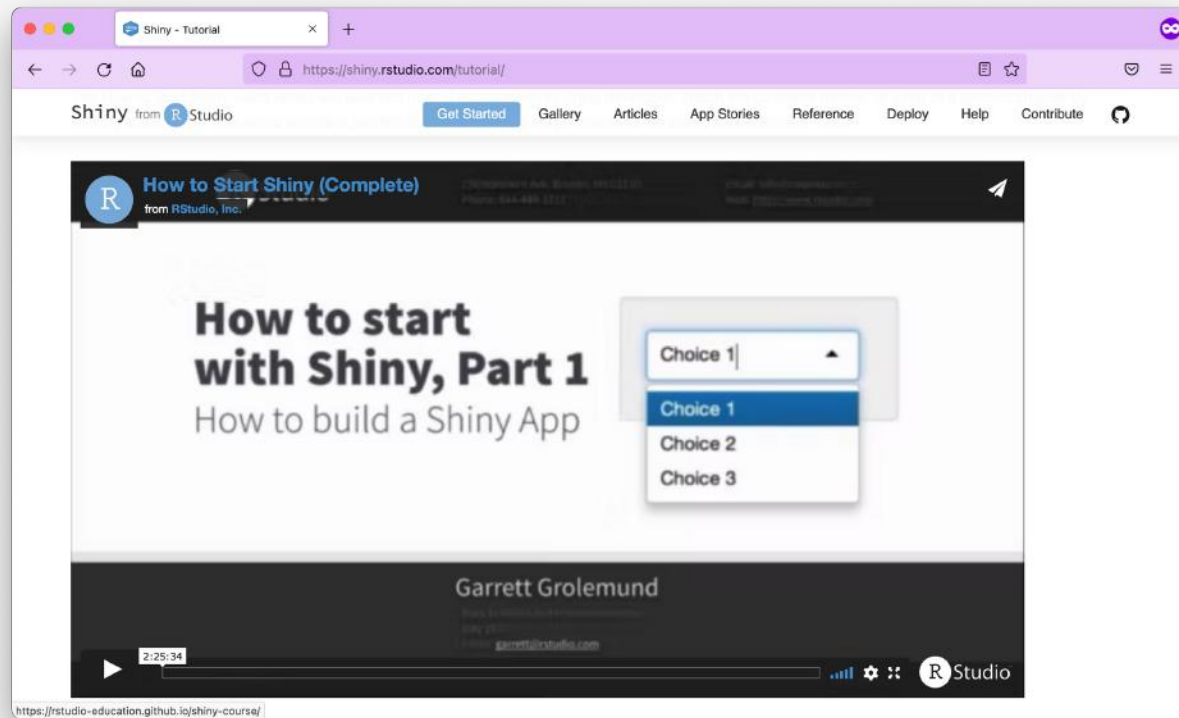
response

Server
host:port

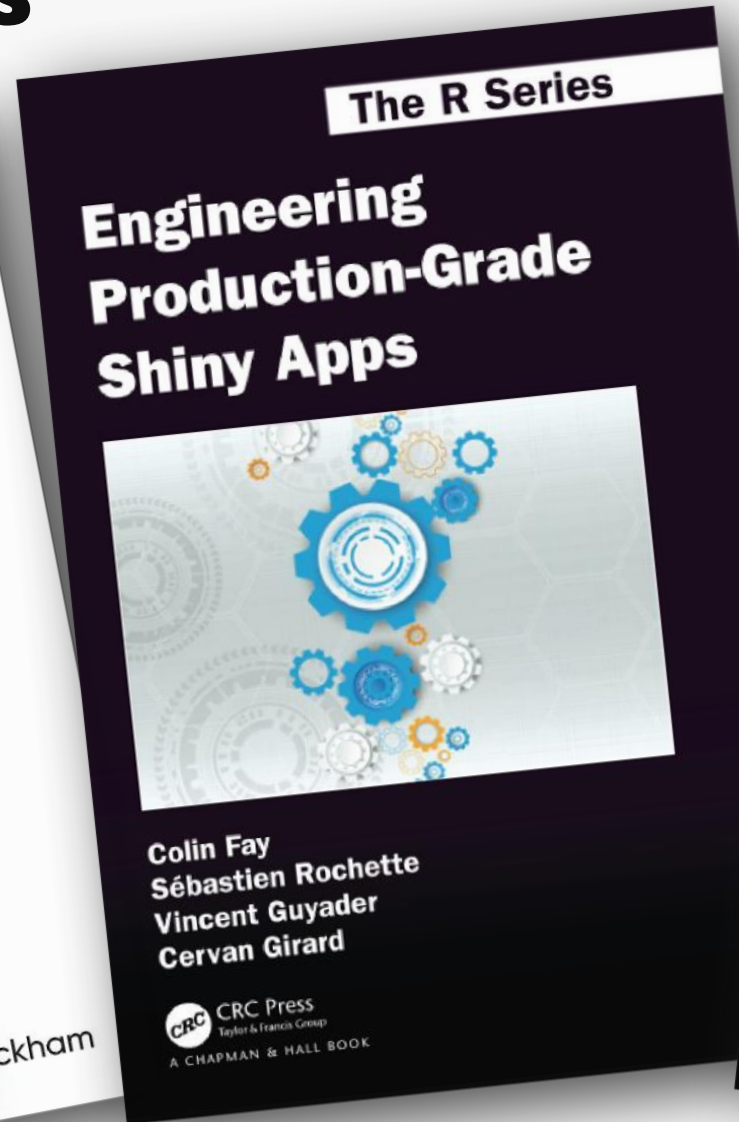
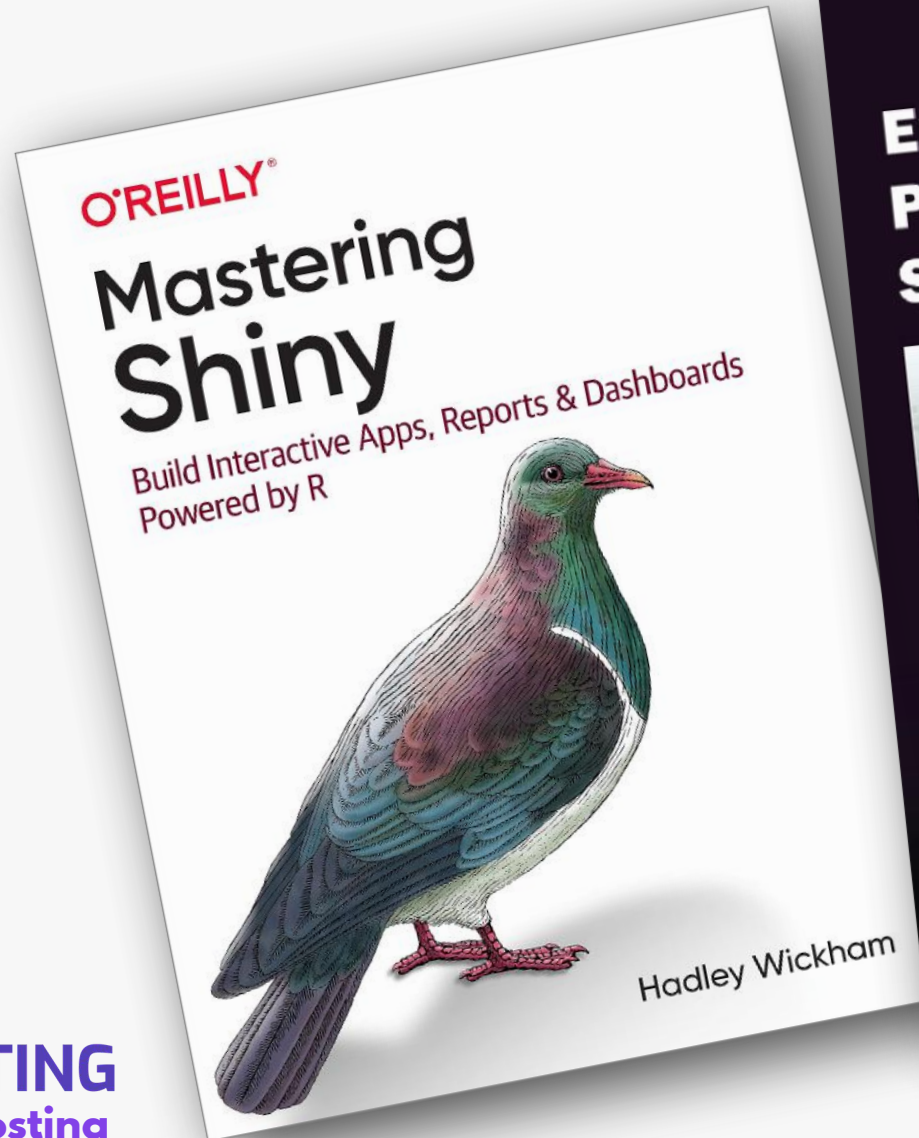


Resources: Web

shiny.rstudio.com



Resources: Books

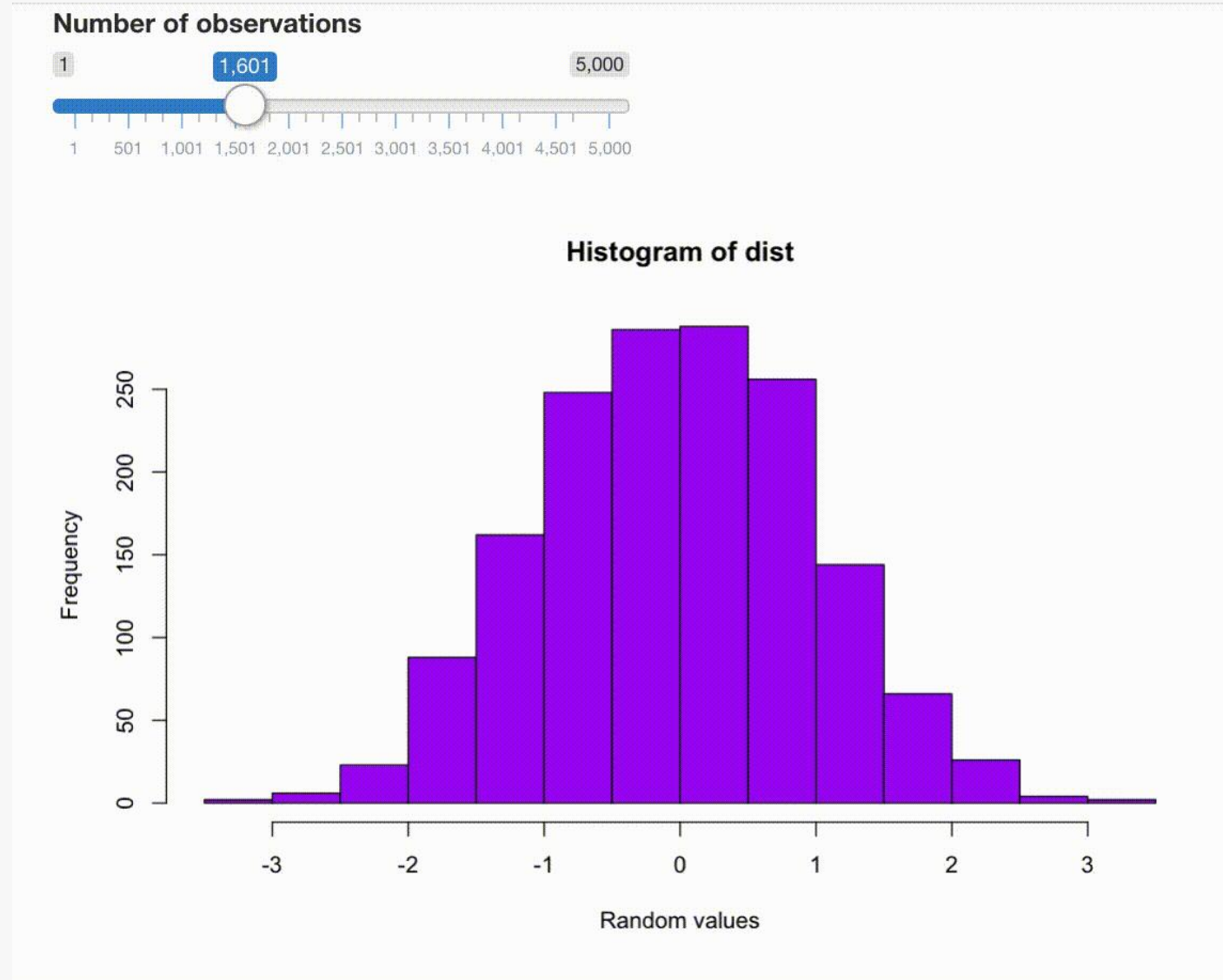


Hello Shiny

```
app.R x
Run App

1 library(shiny)
2 ui <- fluidPage(
3   . . . mainPanel(
4     . . . . . sliderInput("obs",
5     . . . . . "Number of observations",
6     . . . . . min = 1,
7     . . . . . max = 5000,
8     . . . . . value = 100),
9     . . . . . plotOutput("distPlot")
10  . . . )
11 )
12 server <- function(input, output) {
13   . . . output$distPlot <- renderPlot({
14   . . . . . dist <- rnorm(input$obs)
15   . . . . . hist(dist,
16   . . . . . col = "purple",
17   . . . . . xlab = "Random values")
18   . . . })
19 }
20 shinyApp(ui = ui, server = server)
21
```

Hello Shiny



Run app

Single file

Multiple files in a folder

As a function

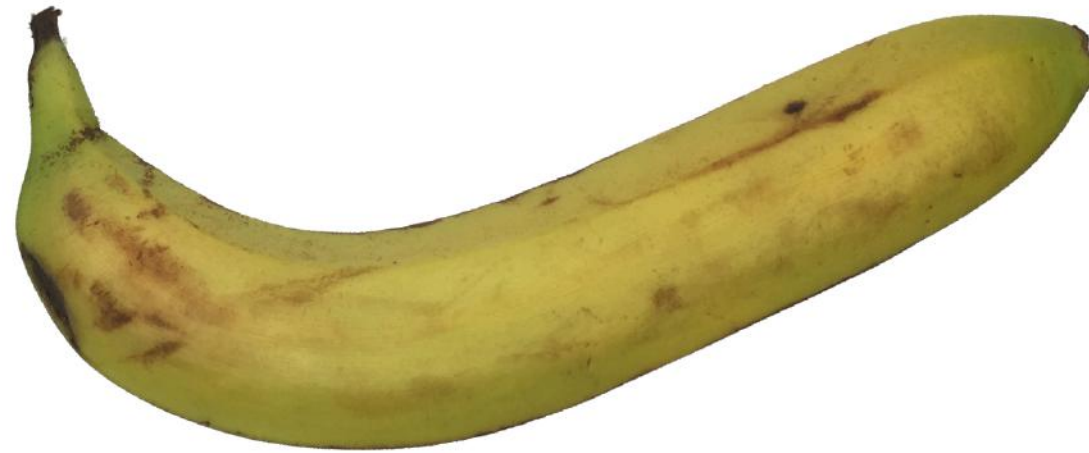


Data

Let's build and AI

1. Ask an important question
2. Collect empirical data
3. Train a model
4. Make a scoring engine
5. Create interactive visuals
6. Build a reactive app

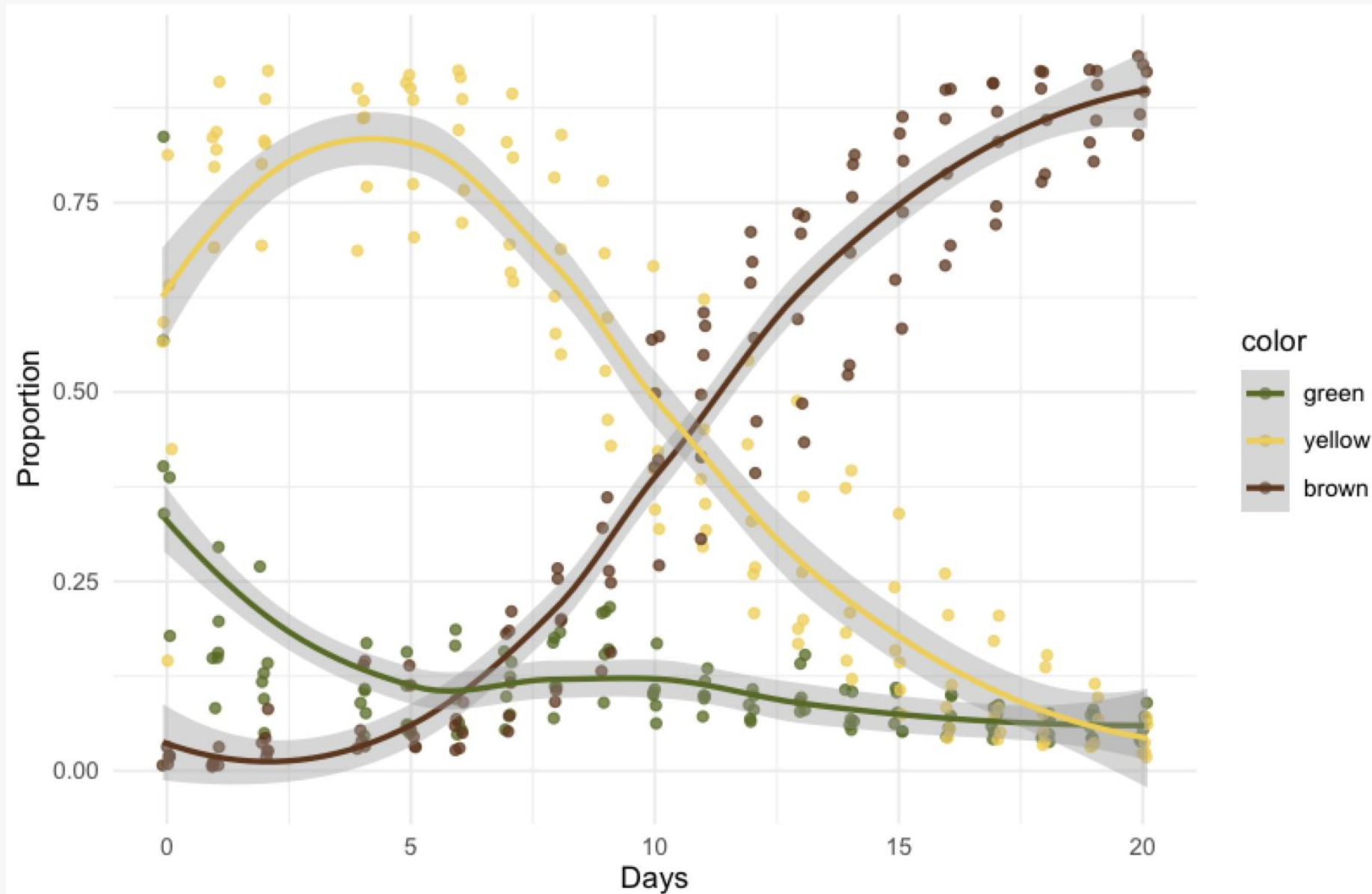
The question



Is this banana ripe?

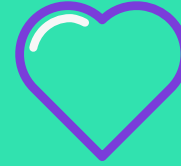
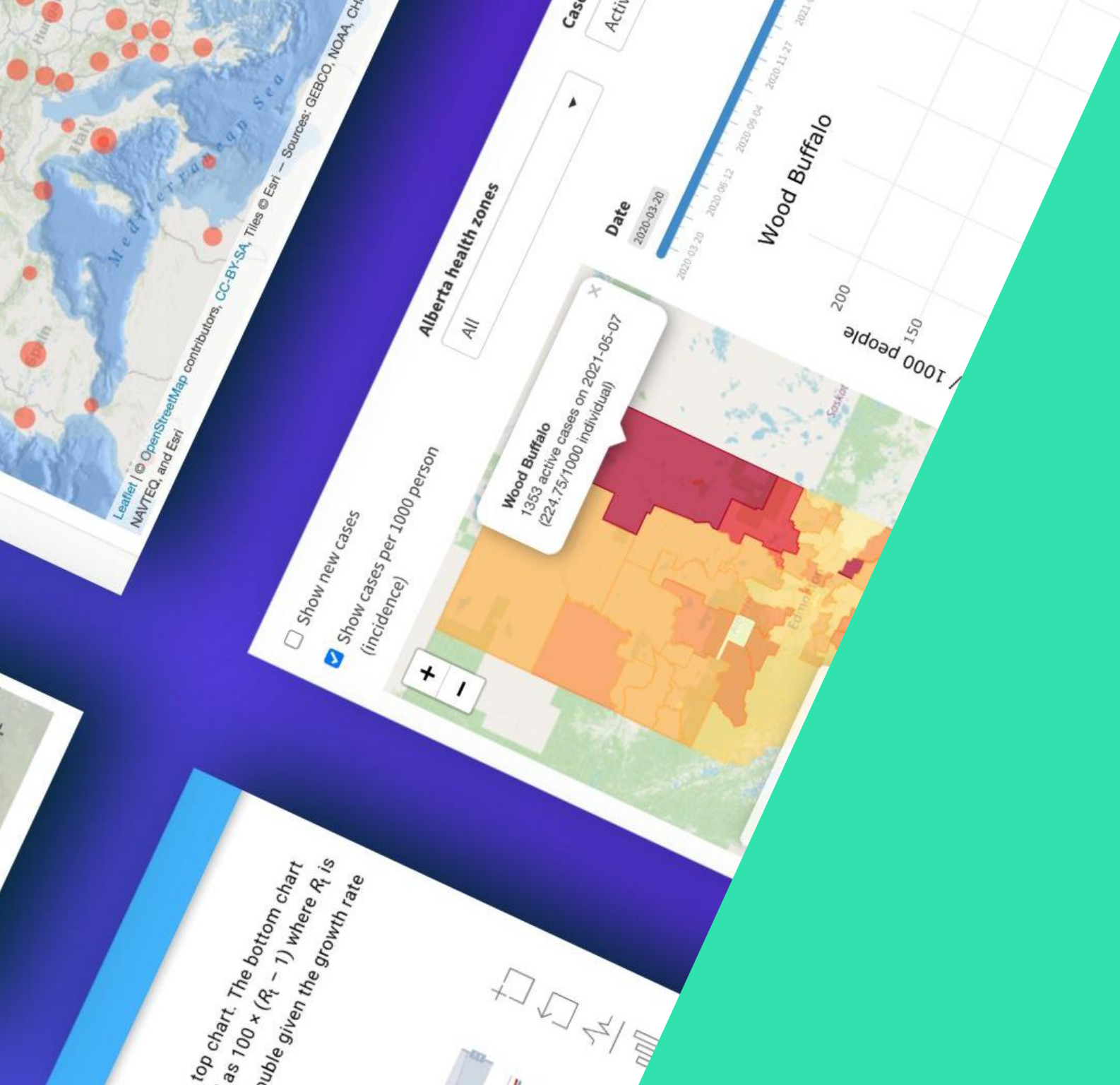
3-week long study

Data set

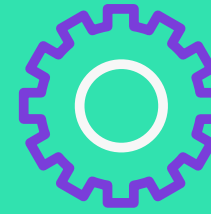


> code .

Hosting



You mastered Shiny



**You engineered
production-grade
Shiny apps**

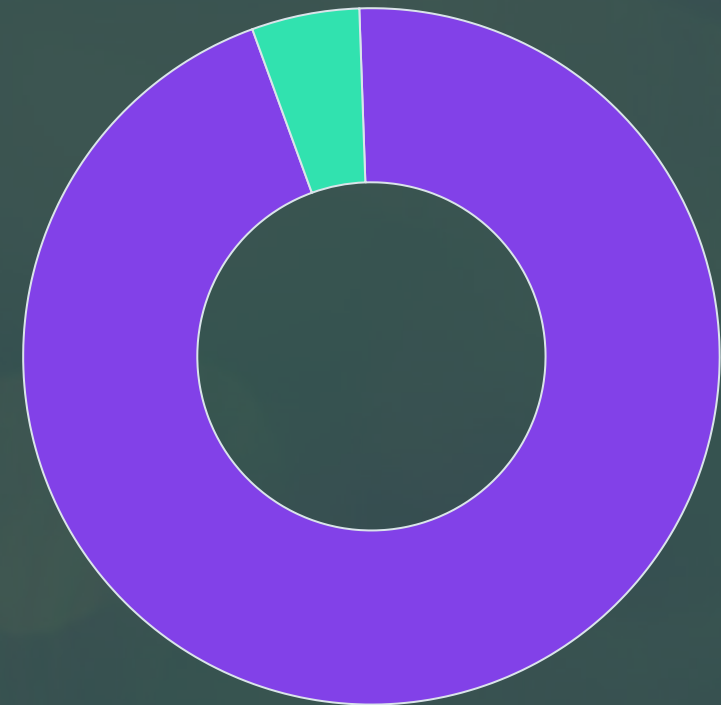


**You make
outstanding user
interfaces**

**THERE ARE 20+ OPTIONS
FOR HOSTING SHINY APPS**



BUT YOU ONLY NEED 1!


**HOW DO YOU PICK ONE THAT
BEST SUITS YOUR NEEDS?**





Shiny - Hosting and deployment ×

← → ↻ 🏠 <https://shiny.rstudio.com/deploy/> 90% ☆ 📧 ☰

Shiny from  Studio [Get Started](#) [Gallery](#) [Articles](#) [App Stories](#) [Reference](#) [Deploy](#) [Help](#) [Contribute](#) 

 **Deploy to the cloud**
Shinyapps.io
Host your Shiny apps on the web in minutes with Shinyapps.io. It is easy to use, secure, and scalable. No hardware, installation, or annual purchase contract required. Free and paid options available.
[Learn more](#) [FAQ](#)

 **Deploy on-premises or in your VPC (open source)**
Shiny Server
Deploy your Shiny apps and interactive documents on-premises with open source Shiny Server, which offers features such as multiple apps on a single server and deployment of apps behind firewalls.
[Learn more](#)

 **Deploy on-premises or in your VPC (commercial)**
RStudio Connect
RStudio Connect is our flagship publishing platform for the work your teams create in R. With RStudio Connect, you can share Shiny applications, R Markdown reports, dashboards and plots, as well as Python-based content, including Flask, Dash, Streamlit and Bokeh, in one convenient place with push-button publishing from the RStudio IDE. Features include scheduled execution of reports and flexible security policies to bring the power of data science to your entire enterprise.

The screenshot shows the Shiny deployment page with three main options:

- Deploy to the cloud**
Shinyapps.io
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Buttons: Learn more, FAQ
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PROS

Push button publishing
Free tier

CONS

25 active hrs/mo for free
No HTTPS with custom domains

The screenshot shows the Shiny deployment page with three options: Shinyapps.io, Shiny Server, and RStudio Connect. A purple overlay on the right side of the page lists pros and cons. The 'Shiny Server' option is circled in red.

PROS

- Free & open-source

CONS

- Requires some skills
- Dependencies can bite you
- AGPL can be an issue
- No PRO features

The screenshot shows the Shiny deployment page with three options: Shinyapps.io, Shiny Server, and RStudio Connect. A purple overlay on the right contains the text: 'PROS: Push button publishing, Fully integrated experience, Ideal for DS teams' and 'CONS: Expensive, Overkill for only Shiny'. A red circle highlights the RStudio Connect option in the screenshot.

Shiny from R Studio

Get Started Gallery Articles App Stories Reference Deploy Help

PROS

- Push button publishing
- Fully integrated experience
- Ideal for DS teams

CONS

- Expensive
- Overkill for only Shiny

Deploy to the cloud

Shinyapps.io

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Learn more FAQ

Deploy on-premises or in your VPC (open source)

Shiny Server

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Learn more

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20 > 3

<https://hosting.analythium.io/how-to-pick-the-right-hosting-option-for-your-shiny-app/>

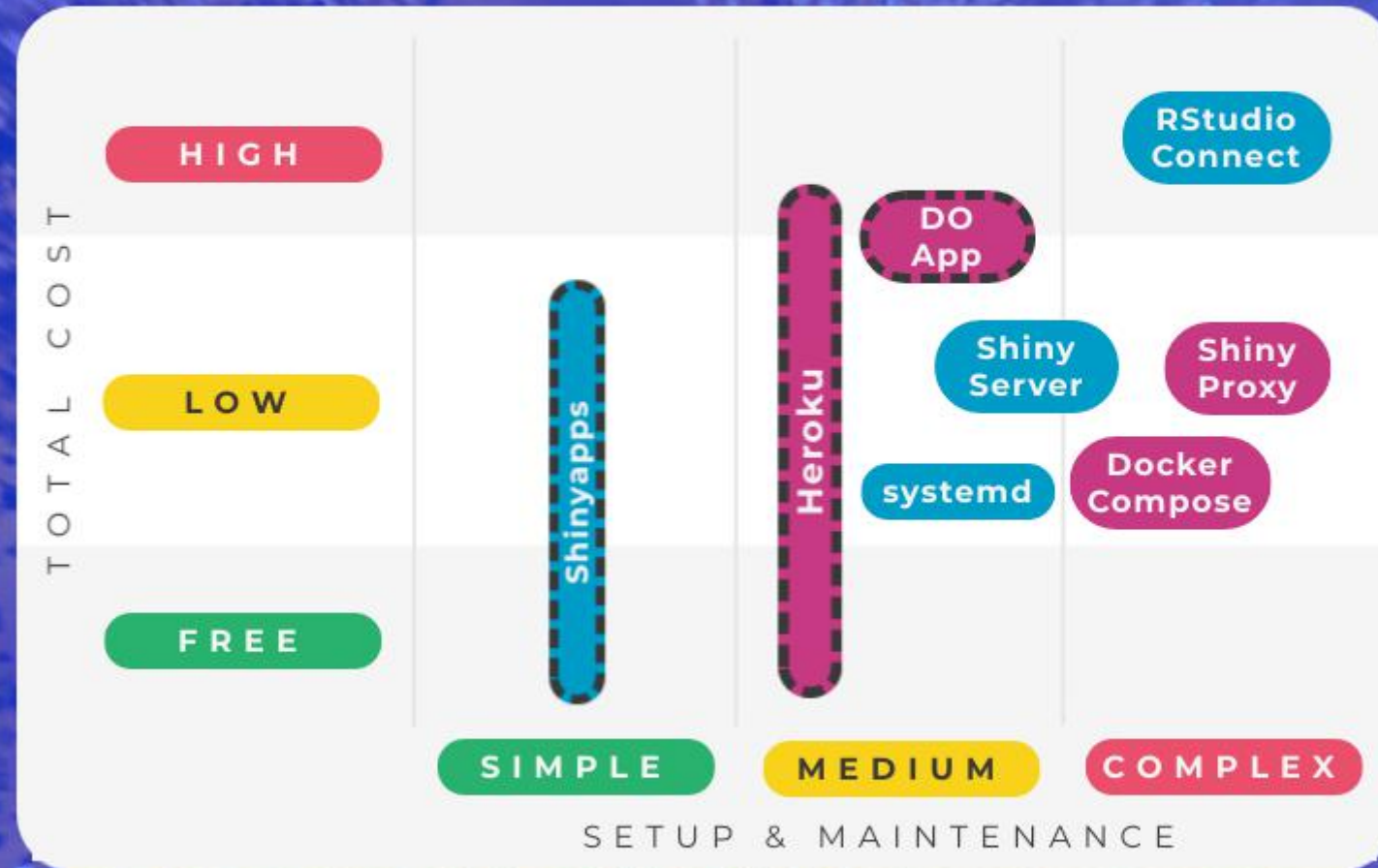
Hosting Option	Total Cost (\$1000 USD)	Number of Apps	PaaS	Docker	Unlimited Hours	High Performance	Auth.	Custom Domain	HTTPS for Custom Domain	Non-Shiny Apps	Admin Access	Data Region	No WebSocket
RStudio Connect	>10	>25	N	N	Y	Y	Y	Y	Y	Y	Y	Y	N
Shinyapps.io, Free	Free	2-5	Y	N	N	N	N	N	N	N	N	N	N
Shinyapps.io, Starter	<1	6-25	Y	N	N	N	N	N	N	N	N	N	N
Shinyapps.io, Basic	<1	>25	Y	N	N	Y	N	N	N	N	N	N	N
Shinyapps.io, Standard	1-10	>25	Y	N	N	Y	Y	Y	N	N	N	N	N
Shinyapps.io, Professional	1-10	>25	Y	N	N	Y	Y	Y	N	N	Y	N	N
Heroku, Free	Free	2-5	Y	Y	N	N	N	Y	N	Y	N	N	N
Heroku, Hobby/Standard	<1	1	Y	Y	Y	N	N	Y	Y	Y	Y	N	N
Heroku, Performance	1-10	1	Y	Y	Y	Y	N	Y	Y	Y	Y	N	N
DO App Platform, Basic	<1	1	Y	Y	Y	N	N	Y	Y	Y	Y	Y	N
DO App Platform, Professional	<1	1	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	N
Shiny Server OS	<1	>25	N	N	Y	Y	N	Y	Y	N	Y	Y	Y
ShinyProxy	<1	>25	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N
Docker on VM	<1	>25	N	Y	Y	Y	N	Y	Y	Y	Y	Y	N
systemd on VM	<1	>25	N	N	Y	Y	N	Y	Y	N	Y	Y	N

Constraints

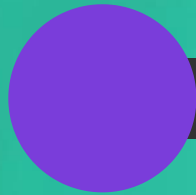
Requirements

Shiny Hosting

COMPARISON



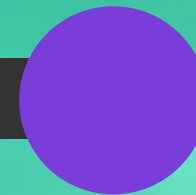
Everything you wanted to know about hosting **Shiny** applications



REVIEWS

Make an informed decision

Use the simple 3-step process



TUTORIALS

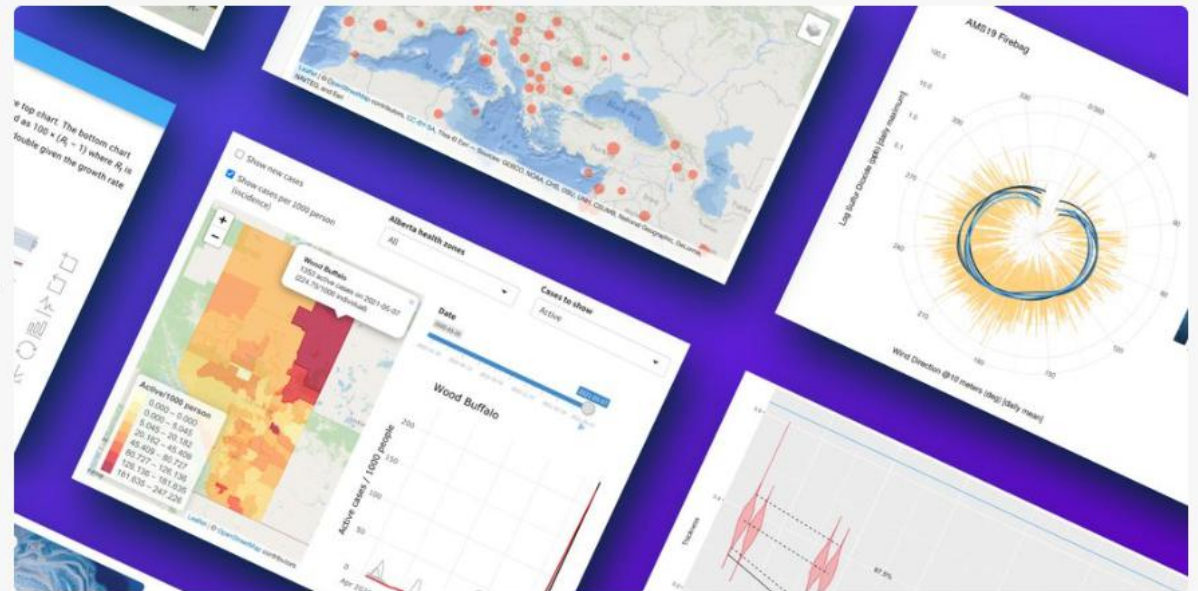
Learn only what you need

Don't waste time on suboptimal options

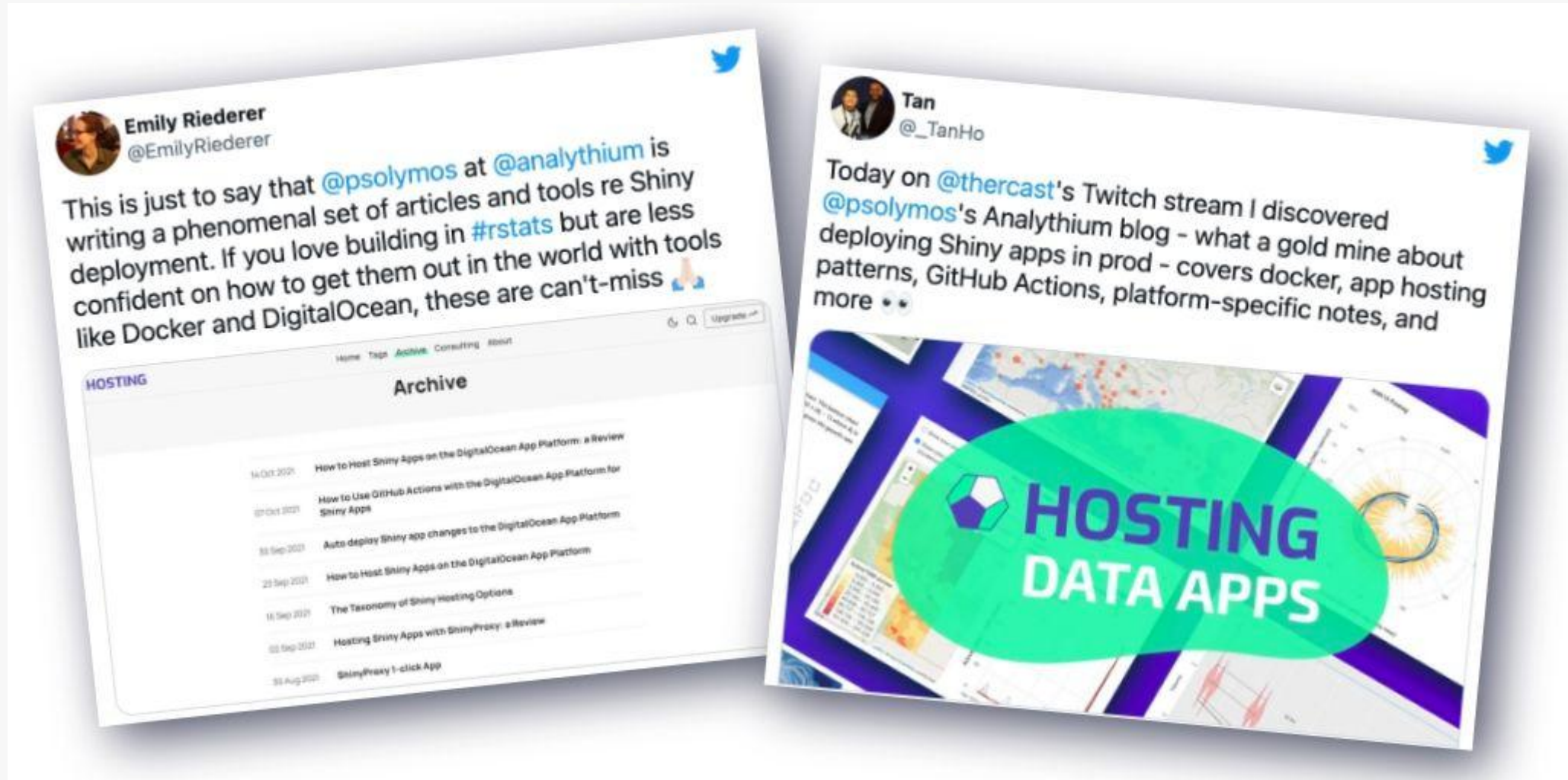
Hosting Data Apps

You mastered Shiny and Dash, your app is production ready – now learn about hosting options and pick one that best suits your needs!

KEEP ME IN THE LOOP!

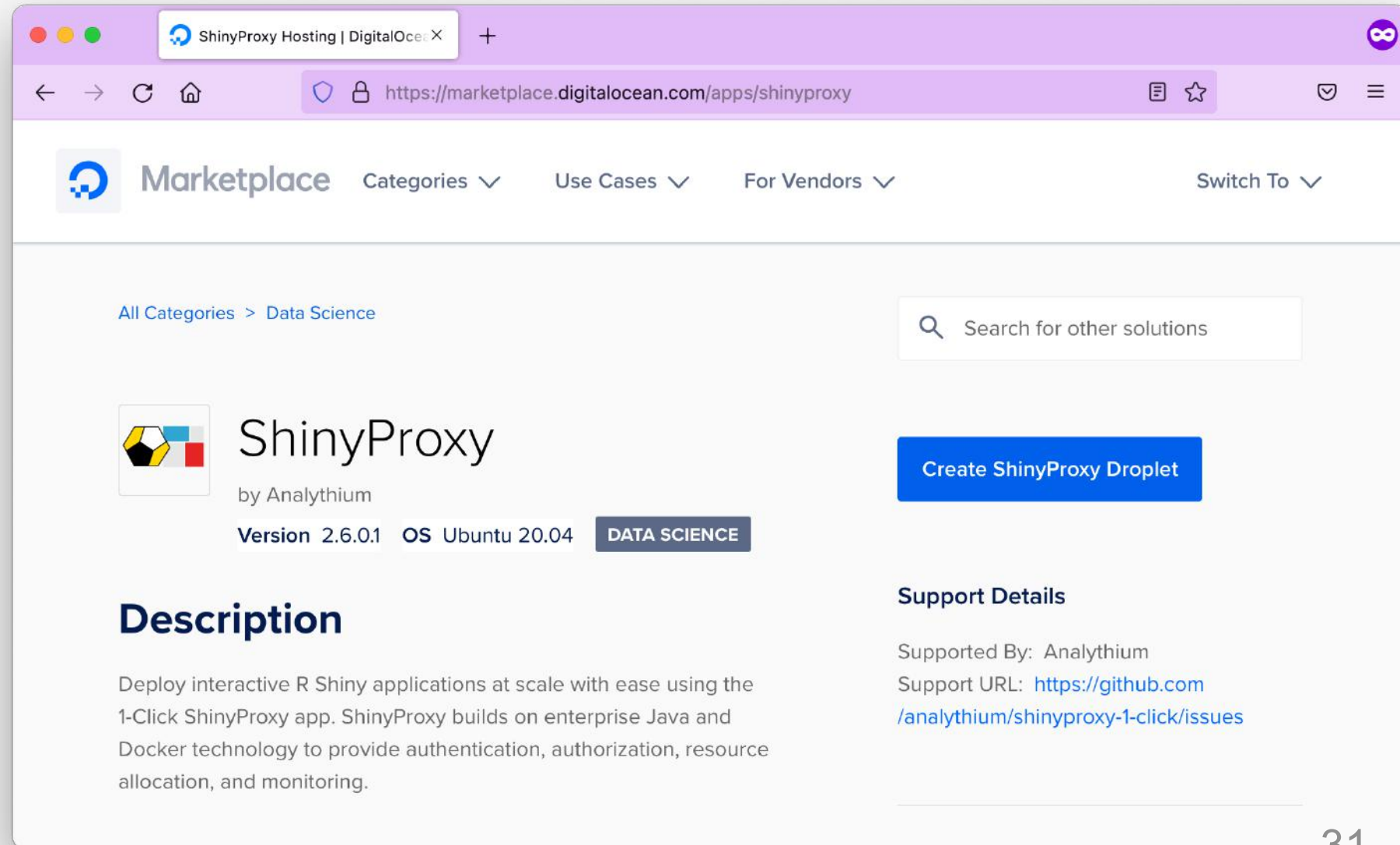


What others are saying

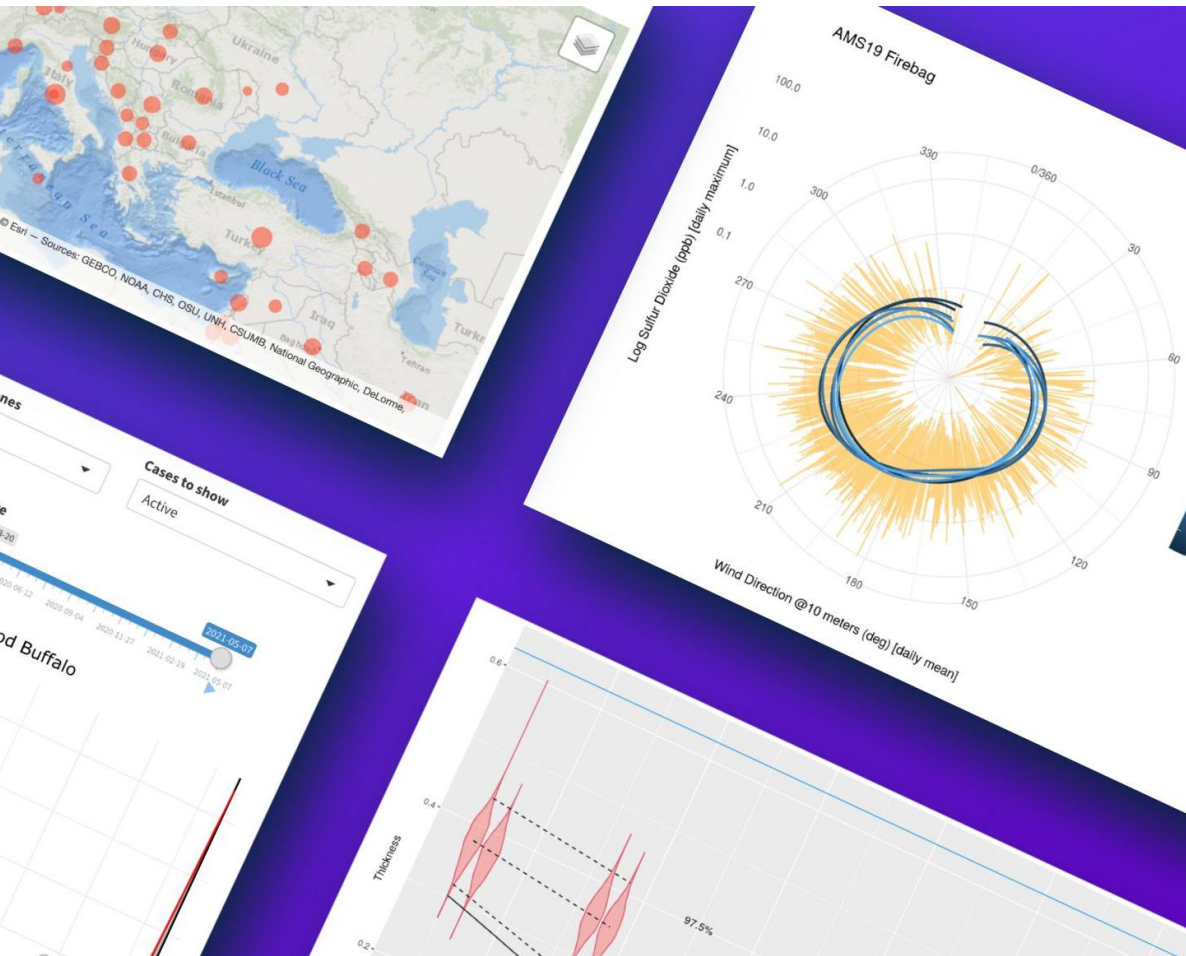


1-click App for ShinyProxy

In 2020 we decided to share our setup (and make it easy for ourself too)



The screenshot shows a web browser window displaying the DigitalOcean Marketplace page for the ShinyProxy app. The browser's address bar shows the URL <https://marketplace.digitalocean.com/apps/shinyproxy>. The page header includes the DigitalOcean logo, the word "Marketplace", and navigation links for "Categories", "Use Cases", "For Vendors", and "Switch To". Below the header, the breadcrumb "All Categories > Data Science" is visible. A search bar on the right contains the text "Search for other solutions". The main content area features the ShinyProxy app listing, which includes a logo, the app name "ShinyProxy", the provider "by Analythium", the version "Version 2.6.0.1", the operating system "OS Ubuntu 20.04", and a "DATA SCIENCE" tag. A prominent blue button labeled "Create ShinyProxy Droplet" is positioned to the right of the app details. Below the app name, a "Description" section begins with the text: "Deploy interactive R Shiny applications at scale with ease using the 1-Click ShinyProxy app. ShinyProxy builds on enterprise Java and Docker technology to provide authentication, authorization, resource allocation, and monitoring." To the right of the description, a "Support Details" section lists "Supported By: Analythium" and "Support URL: <https://github.com/analythium/shinyproxy-1-click/issues>".



HOSTING Data Apps

Everything you wanted to
know about Shiny hosting

hosting.analythium.io

Thank you!