

BUAD621: Decision Analytics & Visualization

Day 1: The Journey Begins

UNIVERSITY OF
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Your Guide

"Adam"



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RUTGERS
THE STATE UNIVERSITY
OF NEW JERSEY

SIMON
UNIVERSITY OF ROCHESTER

UB University at Buffalo
The State University of New York



Adam Fleischhacker

@preposterior

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Your Guide

"Adam"



Adam Fleischhacker

@preposterior



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A Business Analyst's Introduction to Business Analytics

Intro to Bayesian Business Analytics in the R Eco-System (Featuring R, Rstudio, the tidyverse, graphical models, Bayesian inference, causact, and greta's TensorFlow interface from R.)

Adam Fleischhacker
2020-07-23

Chapter 1 Welcome

Figure 1.1: In this book, you will become the business analyst who travels between the real-world of business and the powerful world of mathematics and computers. You will translate real-world decisions into representations where the decision makers can discover and real-world

Available at:
<http://causact.com>

Printed Color Version:
<https://www.amazon.com/dp/B08DBYPRD2>



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Who are you?

Nickname
(what name should I use?)

Adam

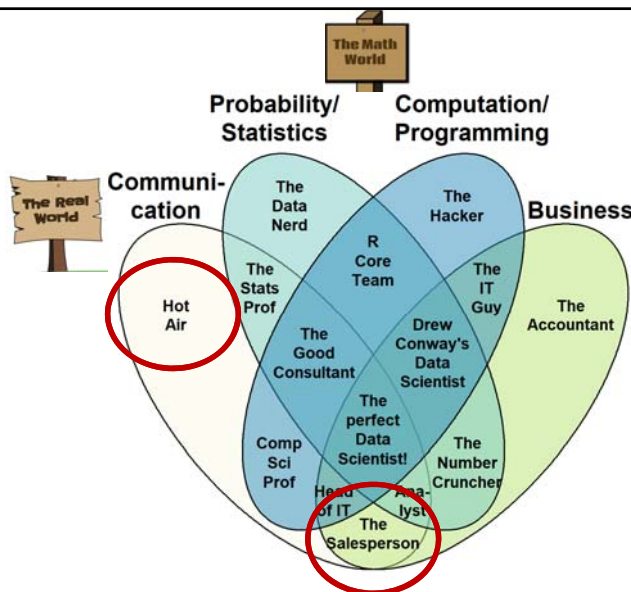
A Personal Tidbit/Fact/Interest/Aspiration



twinspires

Account History

DATE	TIME	TIME/STATUS	TRACK/AGE	WINS	SET TIME	AMOUNT	NUMBERS	TOTAL	PAYOUT	PROFIT/LOSS
Jun 8	7:12:24 PM	Withdrawal								\$2,725.00
Jun 8	6:32:37 PM	Complete	Baltimore 11	Exacta		\$3.00	3/10	\$3.00	\$144.00	\$141.00
Jun 8	6:37:40 PM	Complete	Baltimore 11	Show		\$3.00	10	\$3.00	\$4.80	\$1.80
Jun 8	6:37:23 PM	Complete	Baltimore 11	Win/Place/Show		\$3.00	7	\$3.00	\$53.35	\$50.35
Jun 8	6:30:35 PM	Complete	Baltimore 11	Show		\$3.00	8	\$3.00	-	\$3.00
Jun 8	6:30:19 PM	Complete	Baltimore 11	Trifecta Box		\$2.00	1,3,10	\$12.00	\$2,488.00	\$2,476.00



Data Science Venn
Diagram

Source: Stephan Kolassa (<https://bit.ly/2BjqdBt>)

20F-BUAD621-172 - Modules

2020 Fall

Home
Syllabus
Files
Assignments
Grades
My Media
Media Gallery

Collapse All

View Course Stream
View Course Calendar
View Course Notifications

To Do

DPLYR Quiz 10.1 points | Oct 28 at 11:59pm | X

Getting Started 4 points | Oct 28 at 11:59pm | X

Intro to R 9 points | Oct 28 at 11:59pm | X

Using Functions in R 2 points | Oct 28 at 11:59pm | X

dplyr + connect packages 2 points | Nov 4 at 11:59pm | X

DPLYR Advanced 4 points | Nov 4 at 11:59pm | X

DPLYR Intermediate 9 points | Nov 4 at 11:59pm | X

Module 0 - Getting Started

Analytics Syllabus Fall JPMC 2020.pdf

TEXTBOOK: Online Version @ <https://luminis.com>

TEXTBOOK: Printed Color Version From Amazon

POST: Introductory Discussion

READ: Chapter 1 - Welcome

READ: Chapter 2 - Becoming A Data Driven Analyst

WATCH: Welcome Video (Chapters 1&2) (13:15)

Module 1a - R Computing Basics

READ & CODE: Chapter 3 - The Computing Environment

Course Website

<http://www.udel.edu/canvas>




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Tidyverse

tidyverse.org

Apps SelectorGadget R Markdown: The D... bookdown: Authori... The magick packag... magick v1.0

Tidyverse



R packages for data science

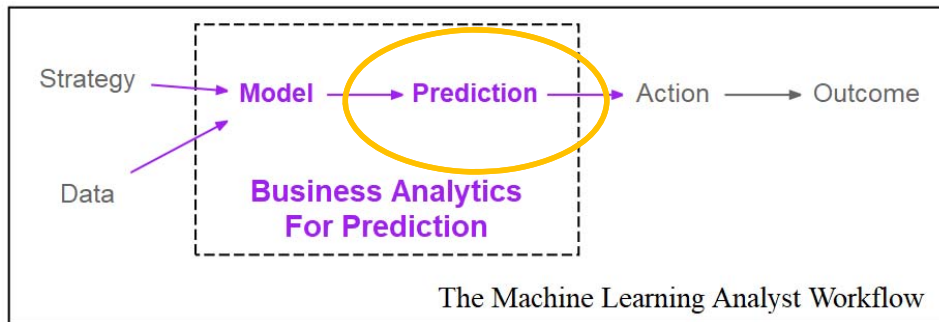
The tidyverse is an opinionated collection of R packages designed for data science. All packages share an underlying design philosophy, grammar, and data structures.

Computing



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PYTHON & The Machine Learning Analyst Workflow



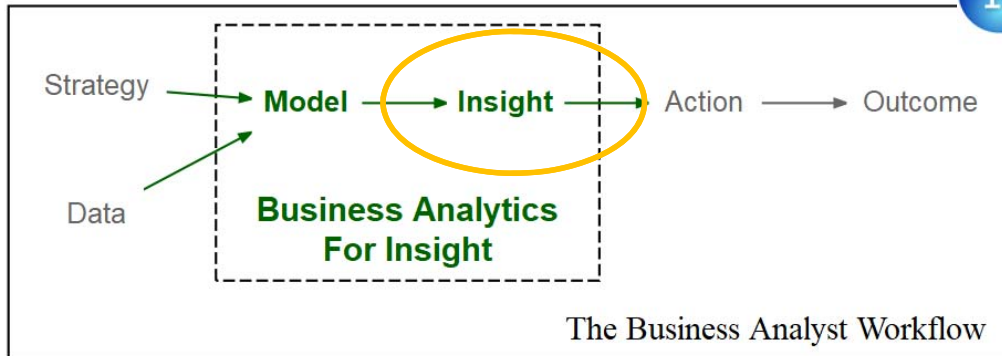
Python - General purpose computing language that can easily plug into production environments.



The screenshot shows a Spotify playlist titled "A Business Analyst's Introduction to Business Analytics" by Adam Fieischh... The playlist is categorized as "PLAYLIST" and features a cover image of a business analyst. The "Recommended" section lists several songs based on the playlist's content:

#	TITLE	Artist	Album	Action
1	Mr Sty	Mr Sty	Mr Sty	ADD
2	Wk Th	Wk Th	Wk Th	ADD
3	Go Roc	Go Roc	Go Roc	ADD
4	Sy Wo	Sy Wo	Sy Wo	ADD
	Serenade No. 13 in G Major, K. 525 "Eine kleine Nachtmusik": I. Allegro	Wolfgang Amadeus Mozart, Capella Istropolitana, Wolfgang Sobotka	Mozart: Kleine Nachtmusik (Eine) / Serenata No...	ADD
	No Easy Way Out - From "Rocky IV" Soundtrack	Robert Tepper	No Easy Way Out	ADD
	Weak And Powerless	A Perfect Circle	Thirteenth Step	ADD
	Burning Heart - From "Rocky IV" Soundtrack	Survivor	Survivor Greatest Hits	ADD
	Gold - Live From Spotify London	Imagine Dragons	Imagine Dragons (Spotify Sessions)	ADD
	Hot Hands	Lindsay Lou	Ionia	ADD
	Old Ties and Companions	Mandolin Orange	Such Jubilee	ADD
	Barbed Wire	Parsonsfield	Blooming Through The Black	ADD
	The Coffee Song	Frank Sinatra	Ring-A-Ding-Ding! (50th Anniversary Edition)	ADD
	Banana Split For My Baby - Remastered	Louis Prima, Keely Smith, Sam Butera & The Witnesses	The Wildest! (Expanded Edition)	ADD

R & The Business Analyst Workflow



The Business Analyst Workflow

R - Statistical programming language dedicated to facilitating statistical workflows and accompanying graphics.



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The screenshot shows the R Studio interface. The left pane displays R code for a presentation slide titled "The Business Analyst's Perspective of Business Analytics". The code includes comments and R functions like `contributor()`, `demo()`, `help.start()`, and `q()`. The right pane shows the same diagram as the previous slide, titled "The Business Analyst Workflow". The diagram illustrates the Business Analyst Workflow, showing the flow from Strategy and Data to Model, then to Insight (highlighted with a yellow oval), then to Action, and finally to Outcome. The Model and Insight are grouped within a dashed box labeled "Business Analytics For Insight".

The Business Analyst Workflow

Strategy → Model → Insight → Action → Outcome

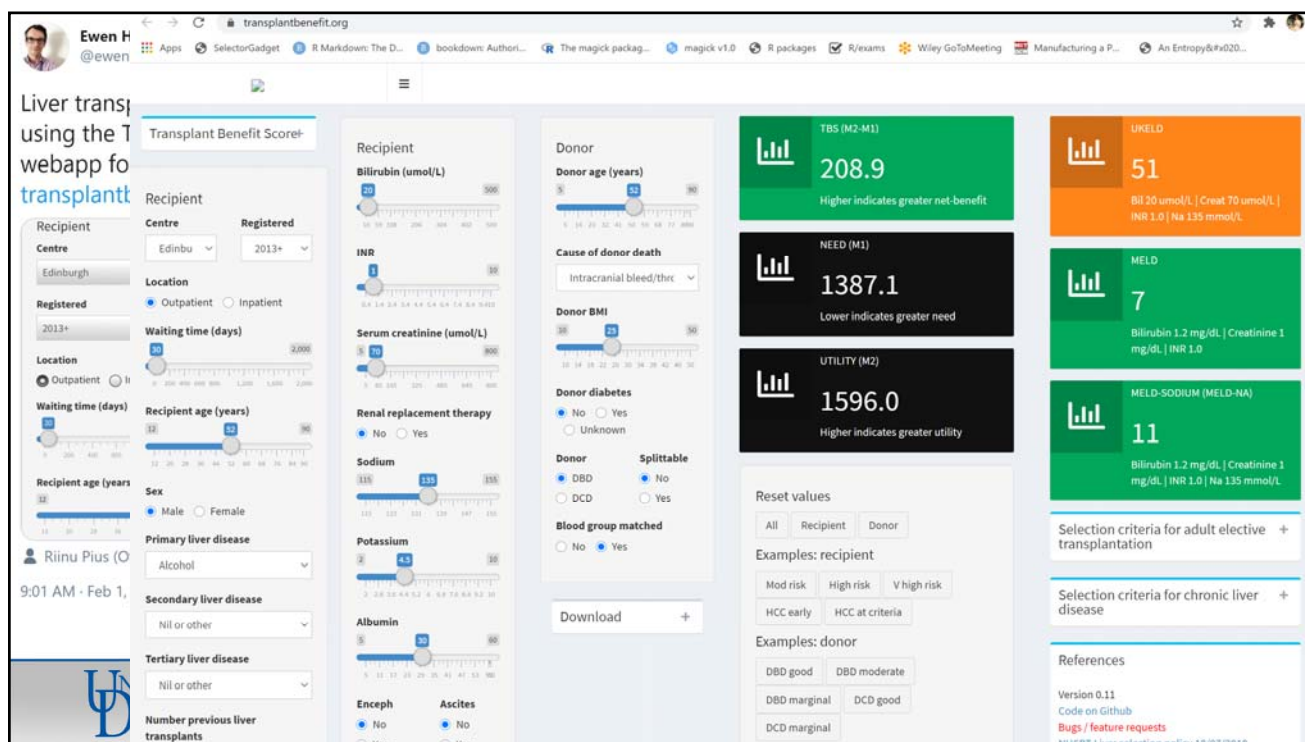
Data → Model

Business Analytics For Insight

The Business Analyst Workflow

2.1 The Business Analyst's Perspective of Business Analytics

We, as business analysts, create value by compelling actions or change within our firm. Calls for action or change are most successful when aligned with strategy and informed with data. This is the job of the *business analyst*; to drive better outcomes by compelling actions that are aligned with strategy and informed by data. This value creation process is called the *business analyst workflow* (a.k.a. the BAW). The BAW is powerful - like a menapng



ResearchHers Code
@ResearchHersCode

Beginners might be asking, "What language or program should I learn?" or "Python versus R?" and I don't think that's the right question. If you want to be a comsci major you'll learn a bunch of languages, but for most people you are solving a problem or using certain data types

5:58 PM · Apr 14, 2020 · Twitter Web App

2 Retweets 14 Likes

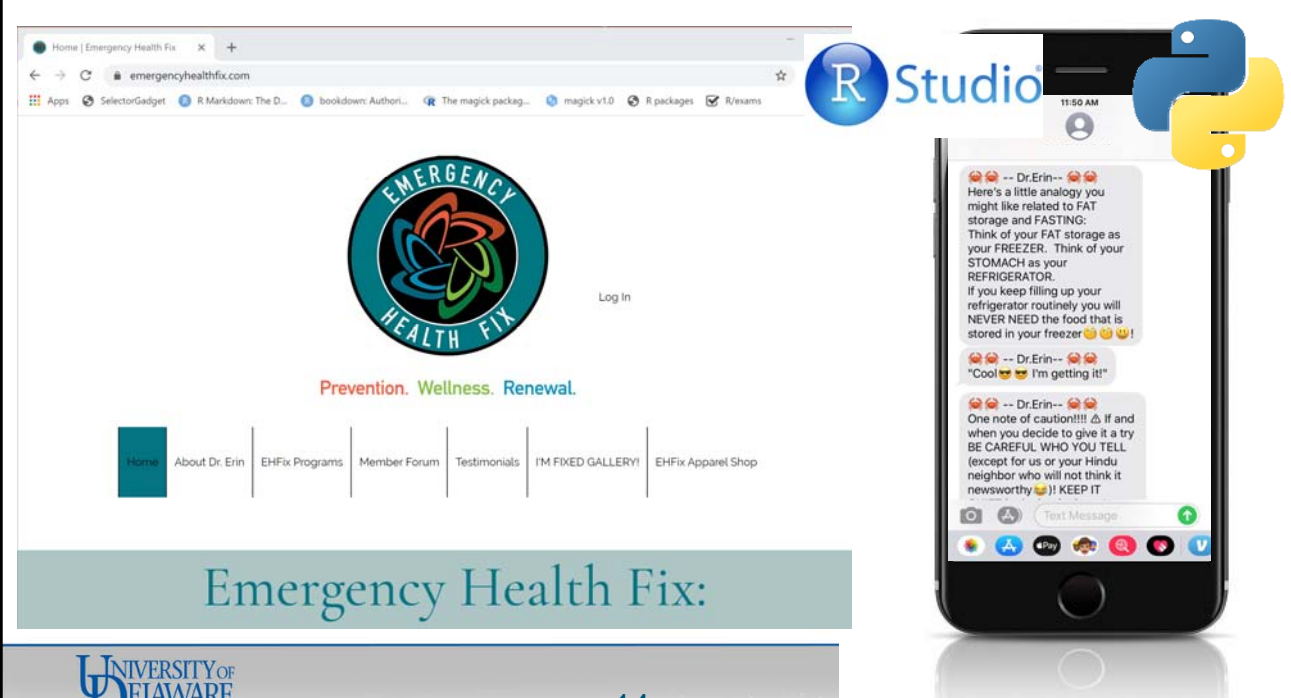


ResearchHers Code @ResearchHersCode · Apr 14

Replying to @ResearchHersCode

The program you want will be determined by:

1. convention in your field
2. resources available to you
3. type of data you work with
4. what you're trying to do



The screenshot shows the Emergency Health Fix website on a desktop browser. The website has a teal and orange logo with the text "EMERGENCY HEALTH FIX" and the tagline "Prevention. Wellness. Renewal." Below the logo is a navigation menu with links: Home, About Dr. Erin, EHFix Programs, Member Forum, Testimonials, ITM FIXED GALLERY!, and EHFix Apparel Shop. A "Log In" link is also present. To the right of the website is a smartphone displaying a text message conversation with "Dr. Erin". The messages discuss an analogy for fasting and fat storage, comparing the body's fat storage to a freezer and the stomach to a refrigerator. The messages also include a warning to be careful of who is told the information.

Emergency Health Fix:

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Grading

Weekly HW Quizzes

88%

Final "Client" Report or
Presentation

12%

Grading

HW Quizzes

88%

- Due Each Wednesday @ 11pm
- Four Attempts at Quantitative Questions
 - *Note: questions will have subtle change with each attempt*
- Start HW early.
- Six missed points are forgiven
 - *(no other excuses please)*



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Grading

- 1 - 3 Team Members
- Due the last Thursday of class

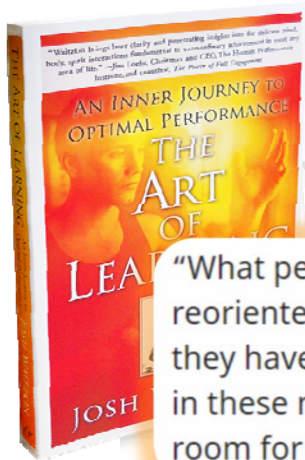
Final "Client" Deliverable

12%



17

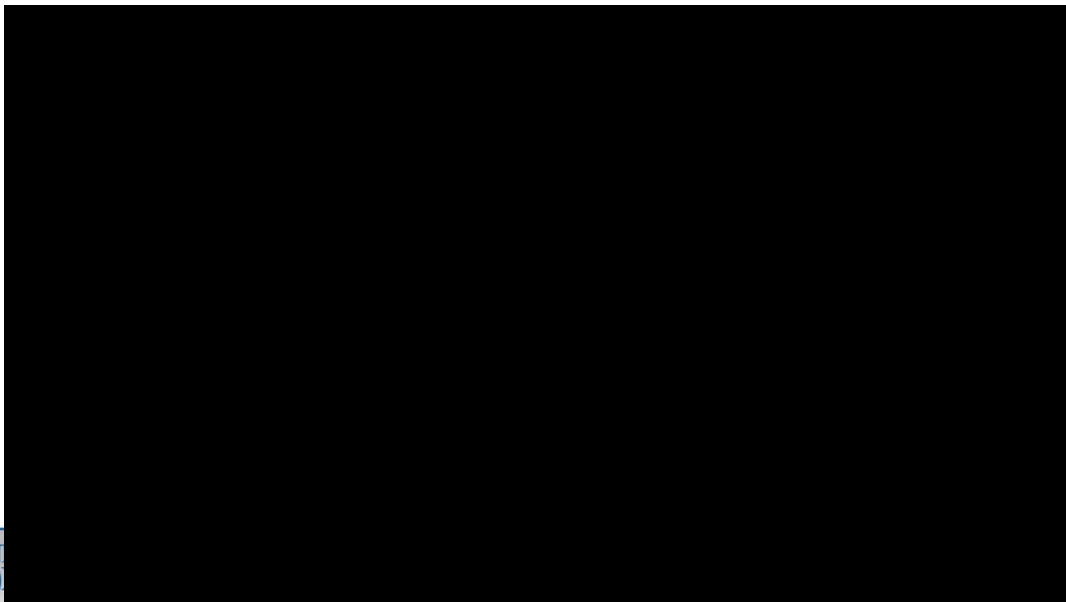
Productive Struggle



Productive struggle is a state of mind where obvious solutions and simple answers to a problem seem elusive, yet despite this, one maintains faith that flexible thinking and perseverance will yield positive outcomes.

"What people don't realize is that world-class performers have reoriented their relationship to suffering, to the point of resistance, they have learned to embrace it, they've learned to see the beauty in these moments where there's pain because there's incredible room for growth." - Josh Waitzkin ([Tim Ferris Show Ep.2](#))

Productive Struggle



A Key Idea

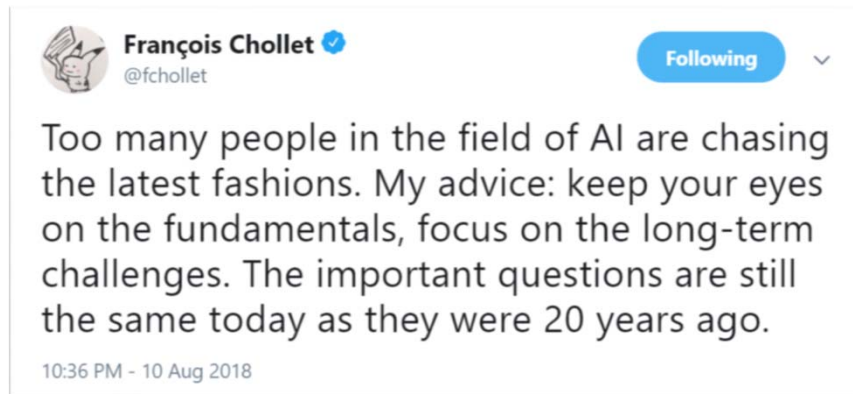
Strategy sets a destination are you helping?



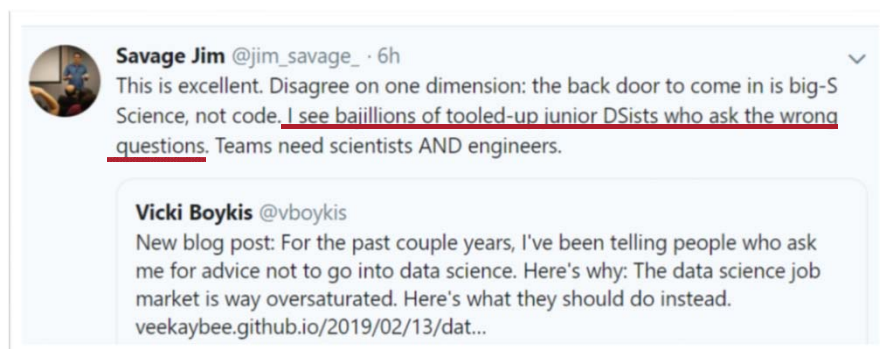
Francois Chollet



Stop Chasing Buzzwords



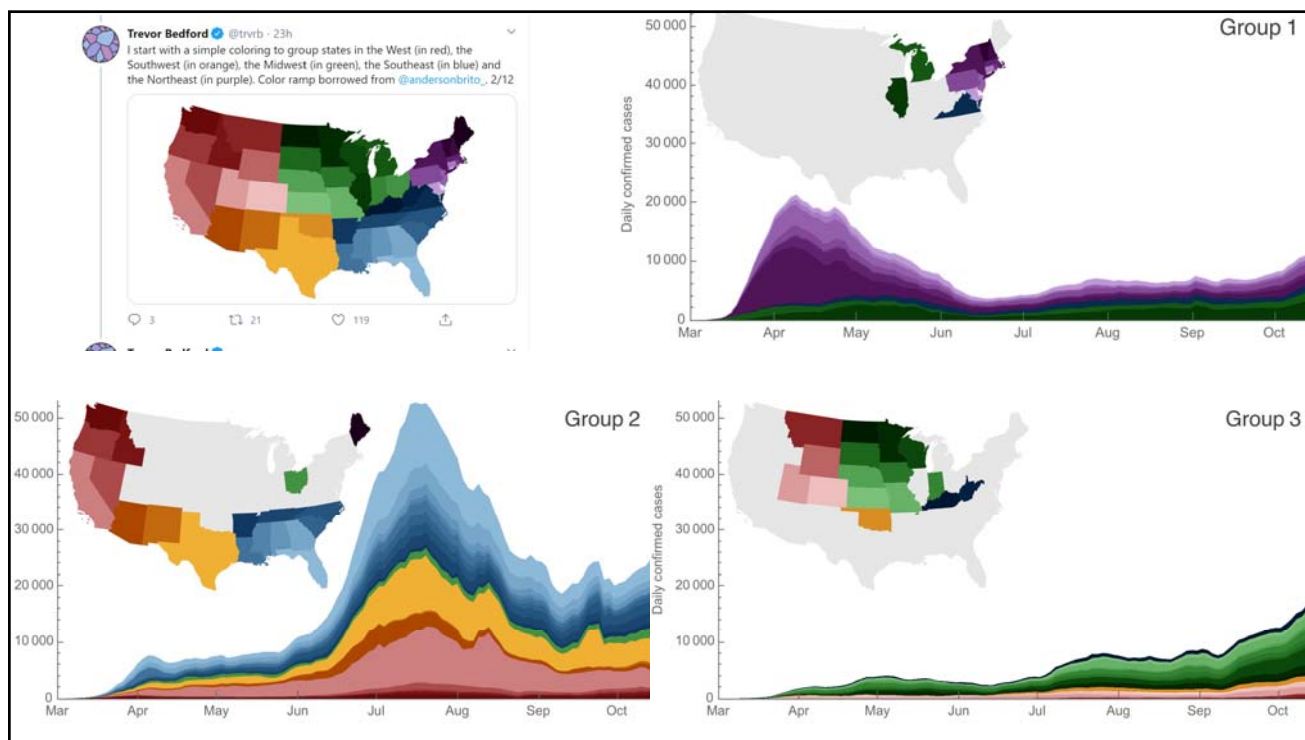
Ask the right questions



Twitter is Great for Data Science Heuristics



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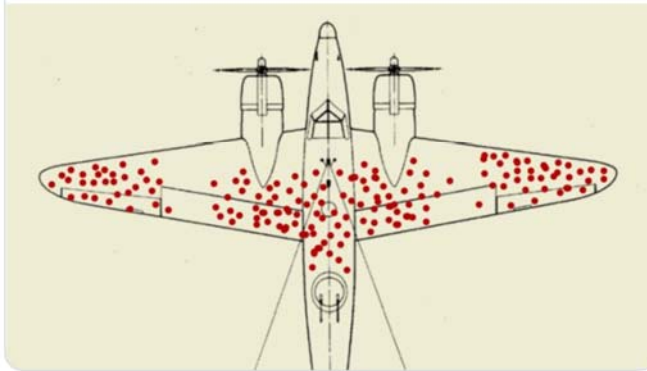


JD Long @CMastication · Oct 9
These meme is excellent pedagogy.



Dare Obasanjo @Carnage4Life · Oct 8

We polled our employees and they agreed our interview processes are fair and everyone we've hired is here on merit.



2

16

115



[Show this thread](#)

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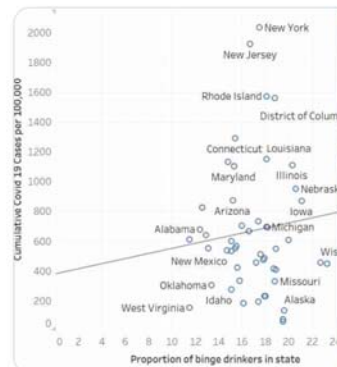
20



Richard McElreath @rmcelreath

Cats reacting to bad COVID-19 models, a short thread.
[This is beneath me but I really need this right now let me have this]

Model 1



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7:49 AM · Jul 6, 2020 · Twitter Web App

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Our Path Forward To Generating Insight and Action with The BAW

Release The BAW



- **Thursdays:**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				★		

- Previous HW Discussion
- New Content in form of Activities, Code Walkthroughs, Quick Tips. Content for HW That is Due Following Wednesday
- Two Blocks of Class Meetings on ZOOM
 - 5:30 – 6:30pm
 - Have Dinner / Work Solo or With Team
 - 7:30 – 8:30pm (*might end early. Will not end late*)



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Our Path Forward To Generating Insight and Action with The BAW

Release The BAW



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
★	★		★		★	★

- **Wednesdays, Fridays – Monday** (*up until class*):
 - **Read** module Chapters
 - **Code** along with Module Chapters
 - **Watch** module videos
 - **Iterate** through successively better HW quiz attempts



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Our Path Forward To Generating Insight and Action with The BAW

Release The BAW



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		★				

- Tuesday (LAB DAY – 5:30pm – 8:30pm)
 - Come to lab day to work on the HW due Wed. with your peers and ask questions about the homework.
 - Optional day if you finished all HW and believe you have gotten it 100% correct
 - Dinner break and unguided time to continue work on HW (6:30pm – 7:30pm)

Minimum Goal for Today. Get the latest version of R and RStudio Running on Your Machine

Module 1a - R Computing Basics	✓	+	⋮
READ & CODE: Chapter 3 - The Computing Environment	✓		⋮
WATCH: The Computing Environment (Chapter 3) (7:24)	✓		⋮

RECONVENE at 7:30pm for quick R demo. After the demo, I will dismiss the class and then help anyone troubleshoot installation issues.

Get Class Demo File

```
install.packages("usethis")  
# choose location for files by setting your working directory  
# to a folder you create with your OS ... like c:\analytics  
# use menus of RStudio:  
# Session --> Set Working Directory --> Choose Directory(i.e.  
analytics)  
  
courseURL = "https://github.com/flyaflya/buad621-  
2020/archive/master.zip"  
  
usethis::use_course(url = courseURL, destdir = getwd())
```