

How HR analytics teams can benefit from data science skills and techniques

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Organization View.

Our company. Started as one of the first People Analytics practices before pivoting to a product business in 2016

www.organizationview.com

Workometry.

By OrganizationView

Our product. Addresses the need to capture & understand employee perception data. Now the main part of our business

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Recognised by Gartner as a “Cool Vendor” in Human Capital Management Applying AI, 2018

What analysts are saying about applying AI in Human Capital Management.

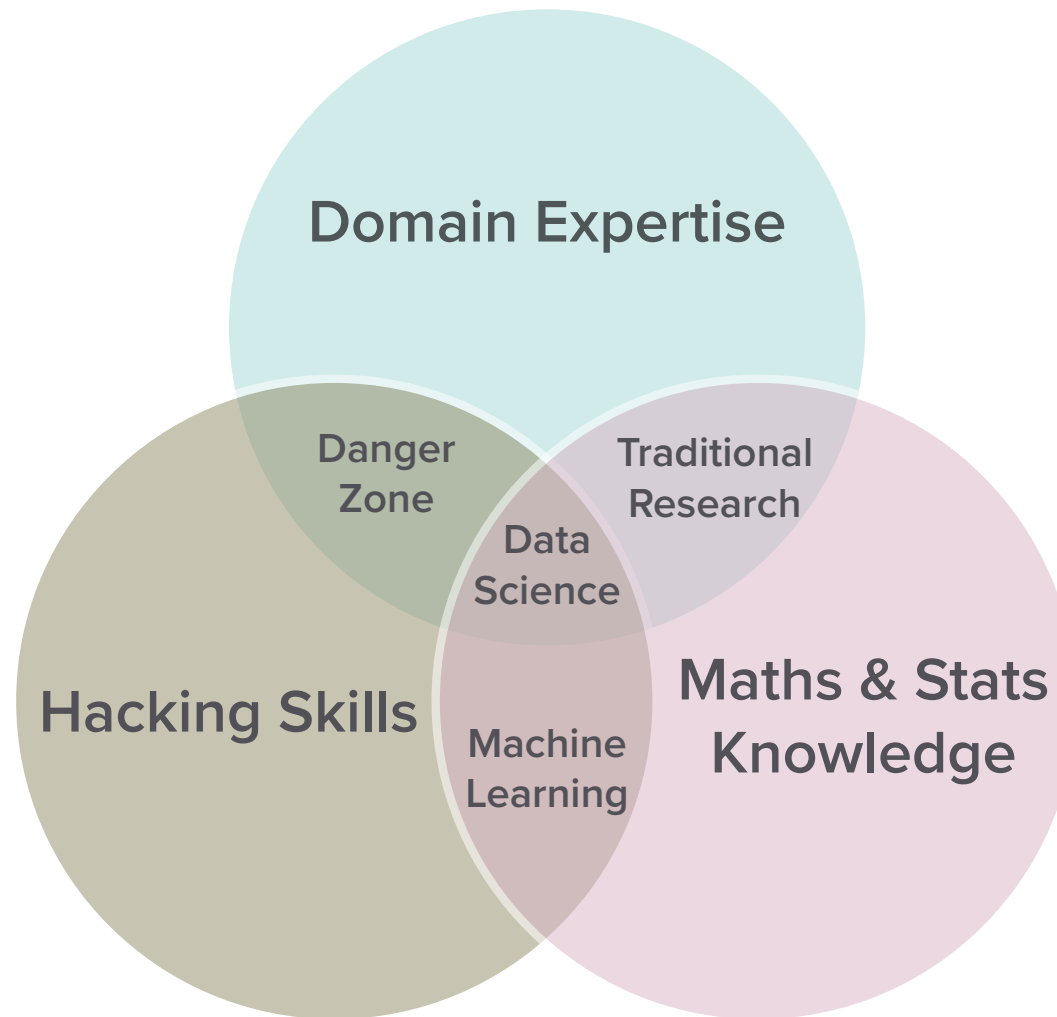


“AI has made its way across the various HCM workstreams to have an impact on just about every HCM outcome. The Cool Vendors highlighted here offer solutions aimed at innovating employee engagement and retention, recruitment and experience, diversity and inclusion, and ultimately performance and efficiency. Whether selected by application leaders to drive better outcomes or analyze performance, these Cool Vendors are being highlighted specifically for their use of AI in helping to transform HCM and align technology with key objectives”

Source: “Cool Vendors in Human Capital Management Applying AI” by Jason A. Cerrato, Ron Hanscome, Helen Poitevin, Werner Goertz, John Kostoulas, Jeff Freyermuth 4 May 2018. The Gartner Cool Vendor Logo is a trademark and service mark of Gartner, Inc., and/or its affiliates, and is used herein with permission. All rights reserved. Gartner does not endorse any vendor, product or service depicted in its research publications, and does not advise technology users to select only those vendors with the highest ratings or other designation. Gartner research publications consist of the opinions of Gartner’s research organization and should not be construed as statements of fact. Gartner disclaims all warranties, expressed or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose.

What is data science?

Data Science is a multi-disciplinary activity

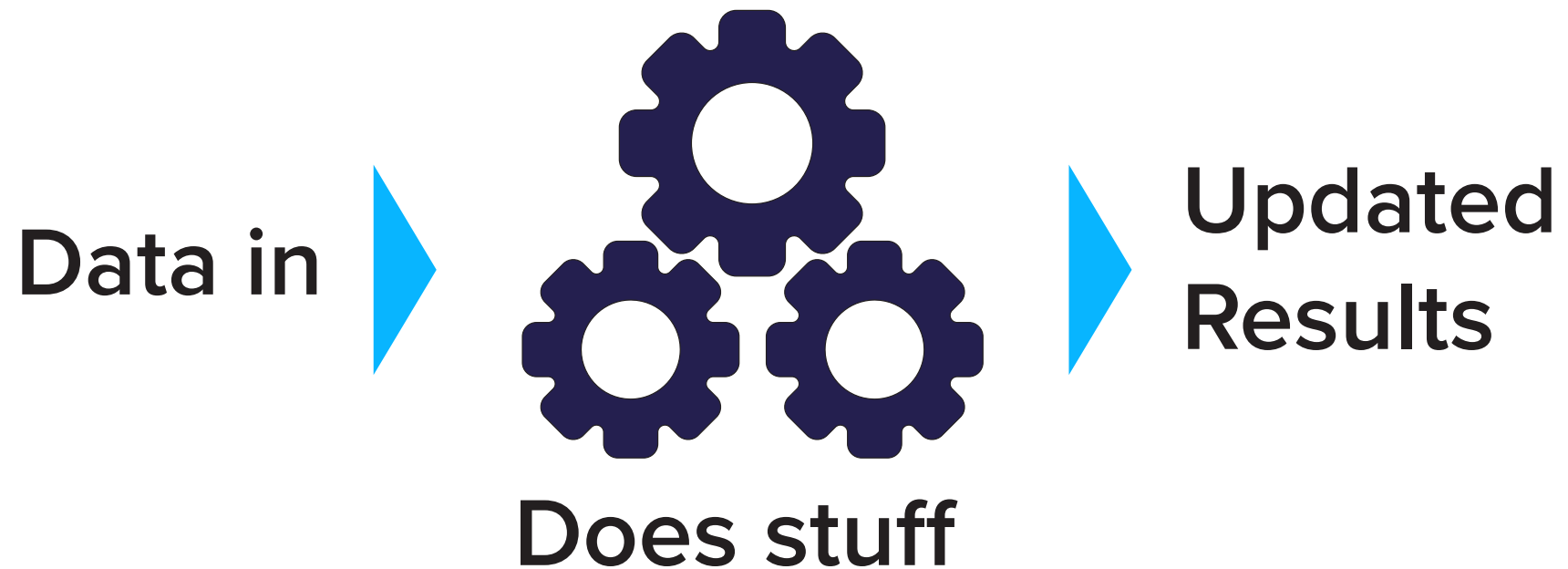


Drew Conway's data science Venn Diagram

Why data science vs statistics / classical analysis

5

Focus is on creating reusable data products, not one-off presentations.



Types of data scientist

Not all data scientists are the same.



Data Engineer

Data Analyst

Data Scientist

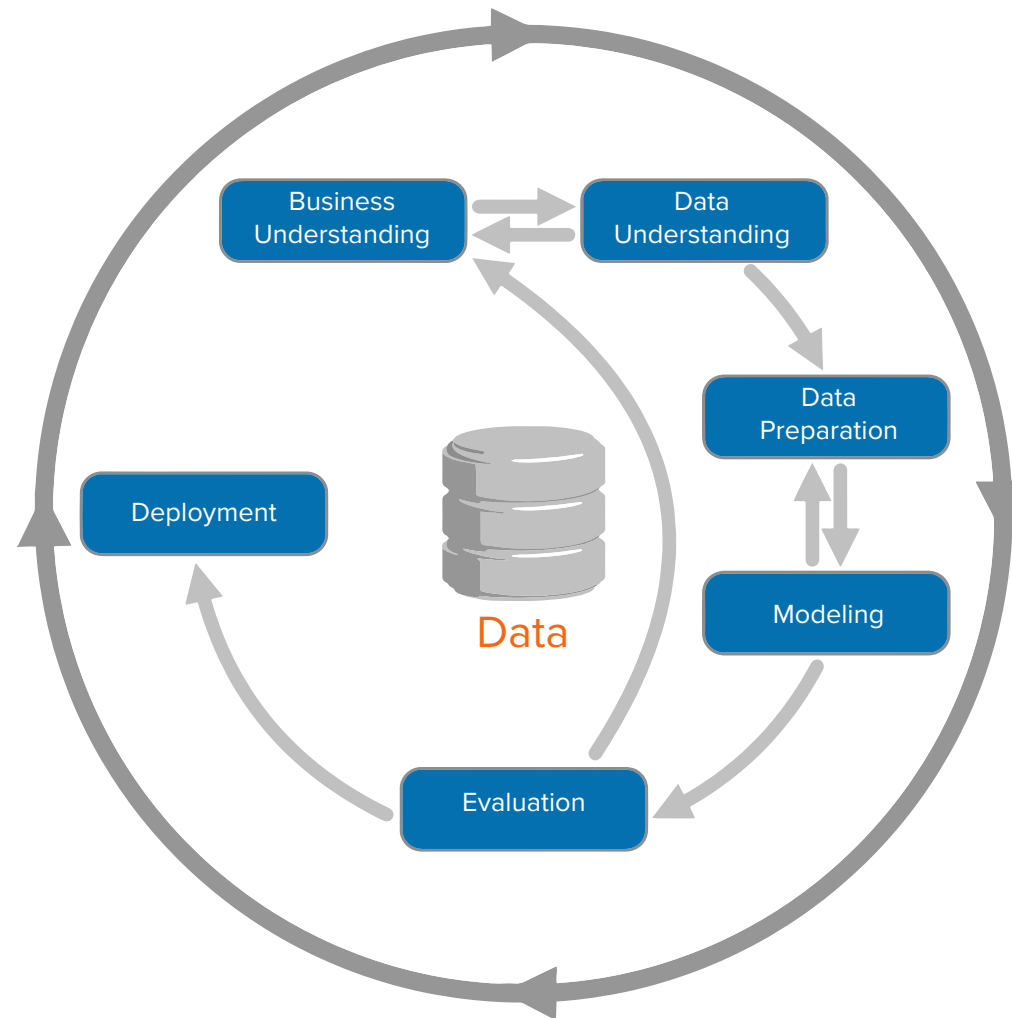
Machine
Learning
Engineer

Machine
Learning
Researcher

CRISP-DM

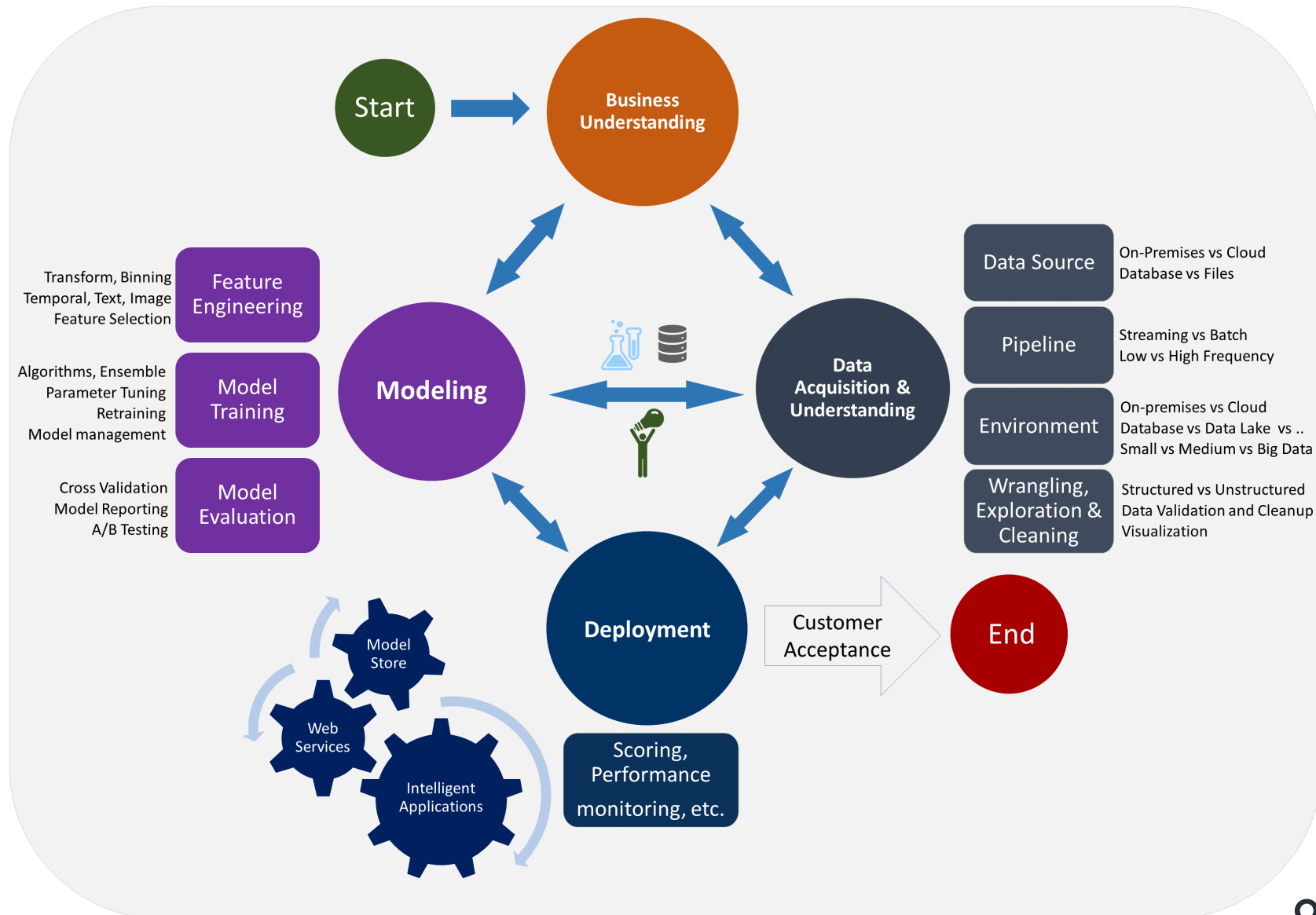
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CRISP-DM was originally developed by IBM for guiding data mining.



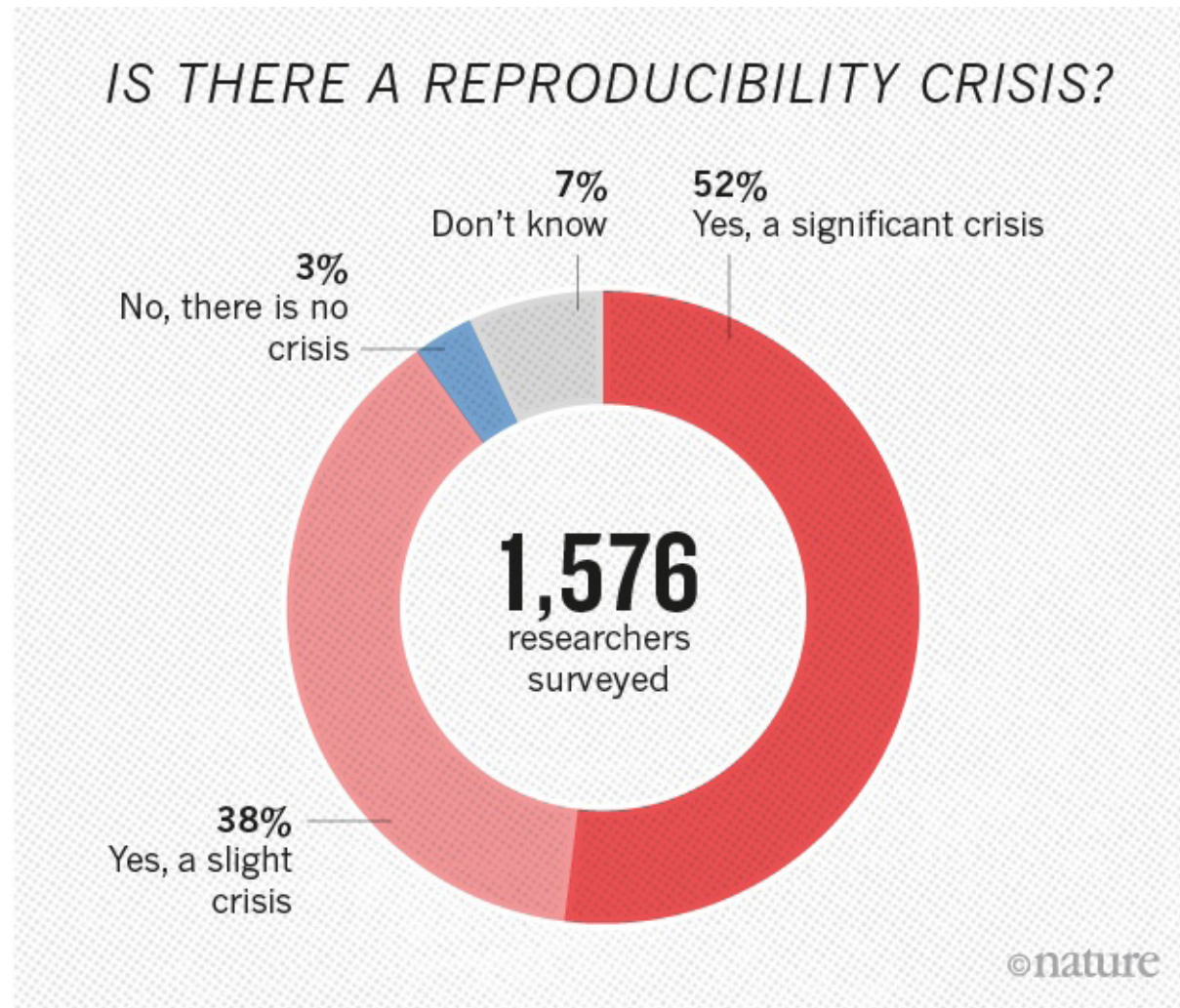
The CRISP-DM methodology

Data Science Lifecycle



Reproducibility

Reproducible analysis becomes easy to scale. Doing the analysis for the first time is costly but further runs have very low marginal cost.



Moving to production

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The objective is not to just do analysis, it's about creating something useful with your data.

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Harvard Business Review

PRODUCT DEVELOPMENT

How to Build Great Data Products

by Emily Glassberg Sands

OCTOBER 30, 2018

SUMMARY

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CINTASCOTCH/GETTY IMAGES

Products fueled by data and machine learning can be a powerful way to solve users' needs. They can also create a "data moat" that can help stave off the competition. Classic examples include Google search and Amazon product recommendations, both of which improve as more users engage. But the opportunity extends far beyond the tech giants: companies of a range of sizes and across sectors are investing in their own data-powered

WHAT TO READ NEXT

4 Analytics Concepts Every Manager Should Understand

The customer is **always** right.

With analytics, you can be right about them too.

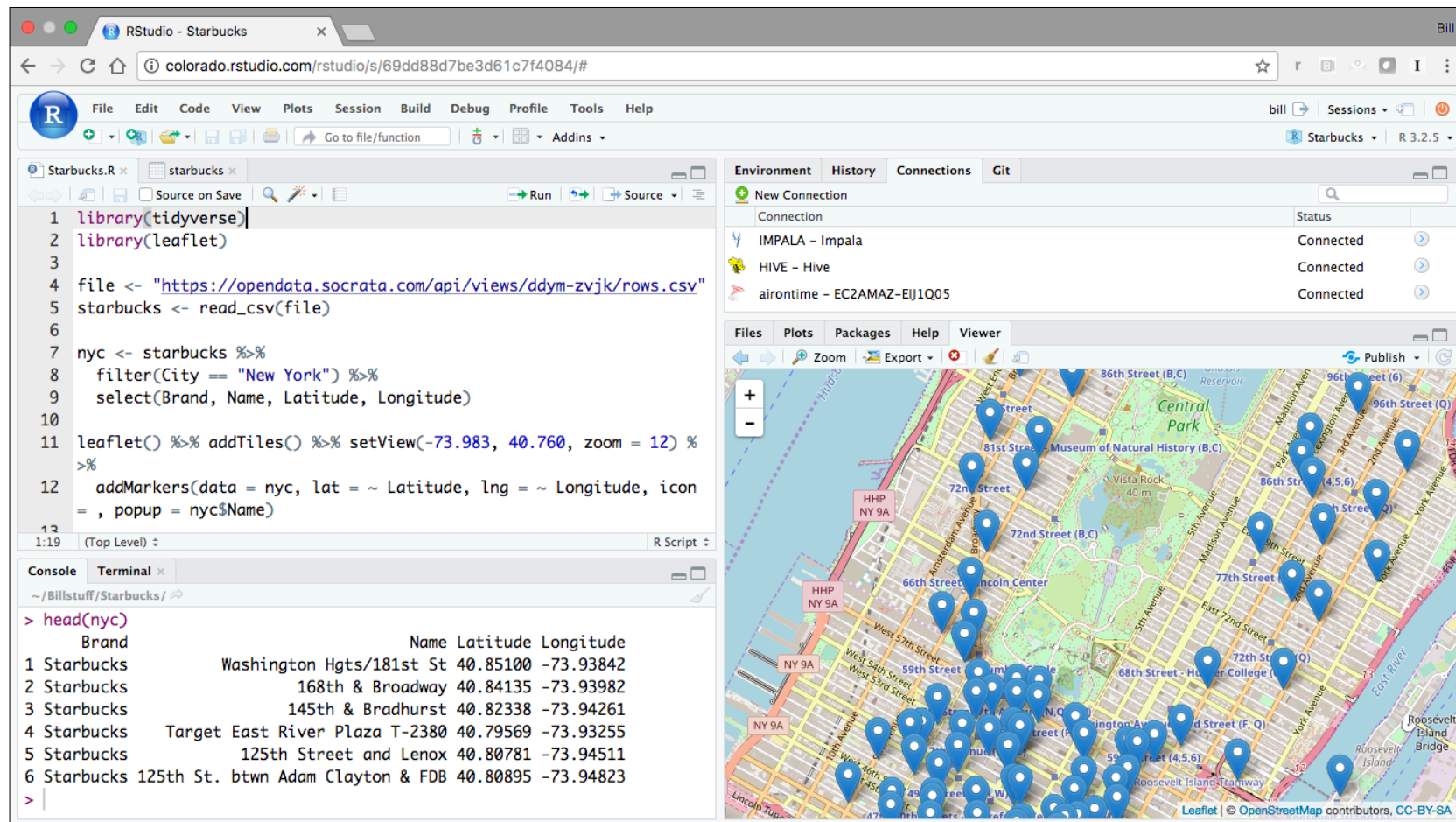
READ THE MIT SLOAN MANAGEMENT REVIEW REPORT

Organization View.

Tools of the trade

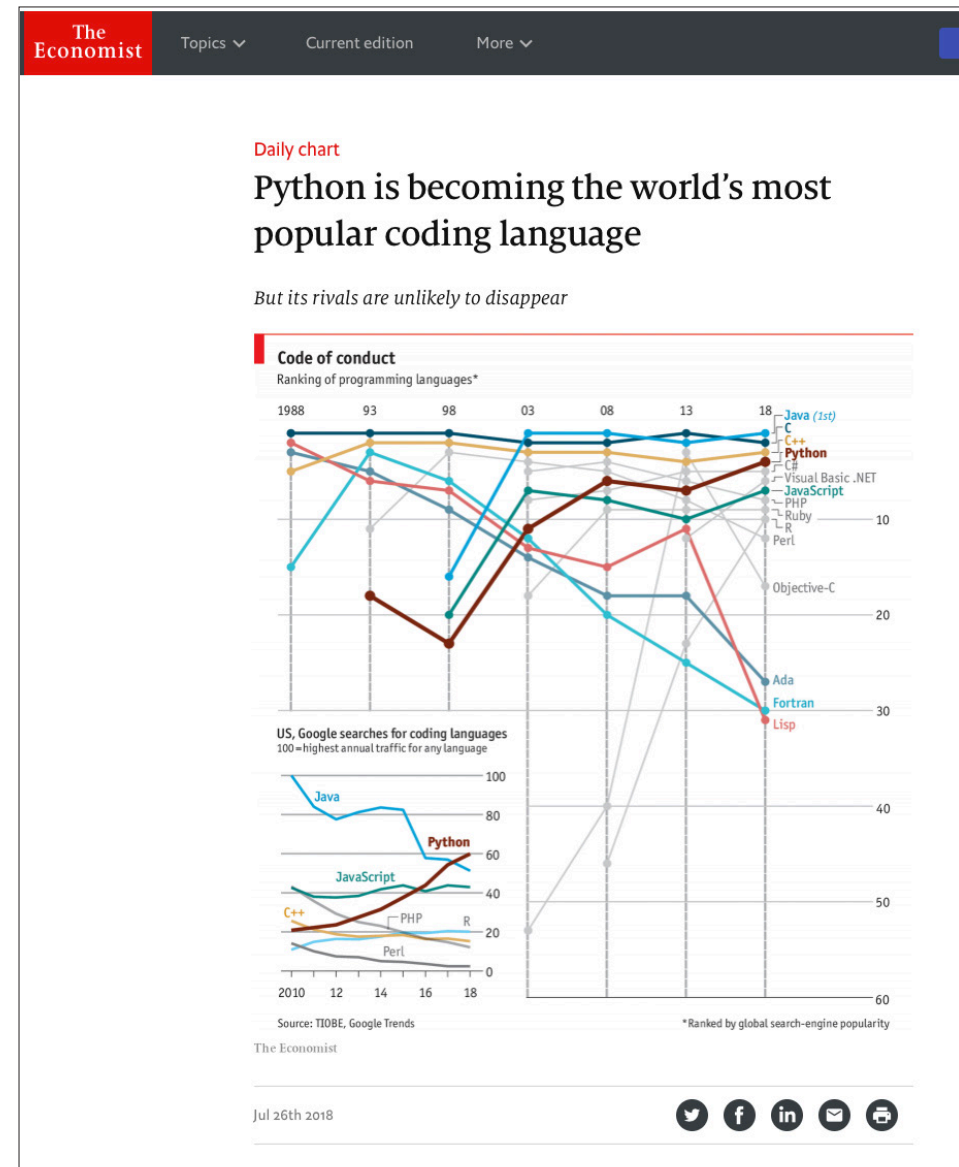
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To make it reproducible you need to write code

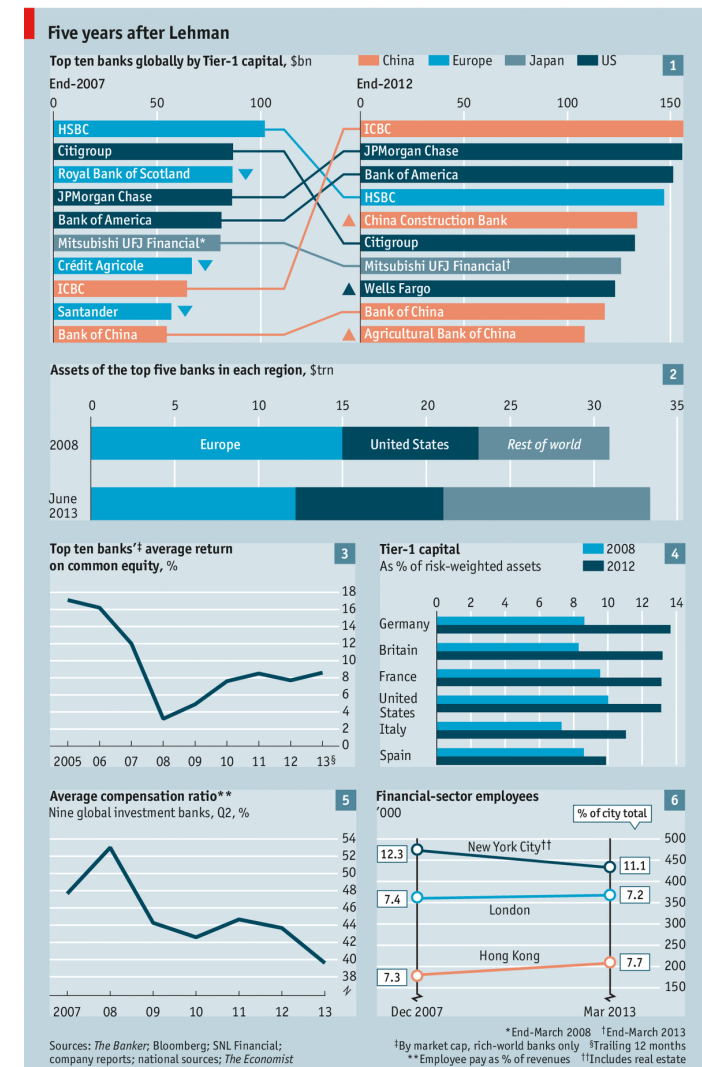


Python

Python is a general-purpose programming language with some very useful data-science capability



R is a statistical programming language that does data analysis very well



The Economist uses R to produce statistical graphics

APIs (Application Programming Interfaces) let you access a range of data or services quickly and easily, usually with relatively low cost.

Microsoft Azure

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Emotion PREVIEW

Analyze faces to detect a range of feelings and personalize your app's responses.

Explore Cognitive Services:
[Documentation](#)
[API](#)
[SDK](#)
[Portal](#)
[Stack Overflow](#)

As Face API now integrates emotion recognition capability in general availability, we'll be deprecating Emotion API preview on February 15, 2019 for existing customers. Try the emotion recognition capabilities of Face API now. [Learn More](#)

Recognize emotions in images

The Emotion API takes a facial expression in an image as an input, and returns the confidence across a set of emotions for each face in the image, as well as bounding box for the face, using the Face API. If a user has already called the Face API, they can submit the face rectangle as an optional input.

The emotions detected are anger, contempt, disgust, fear, happiness, neutral, sadness, and surprise. These emotions are understood to be cross-culturally and universally communicated with particular facial expressions.

See it in action

```

Detection result:
2 faces detected

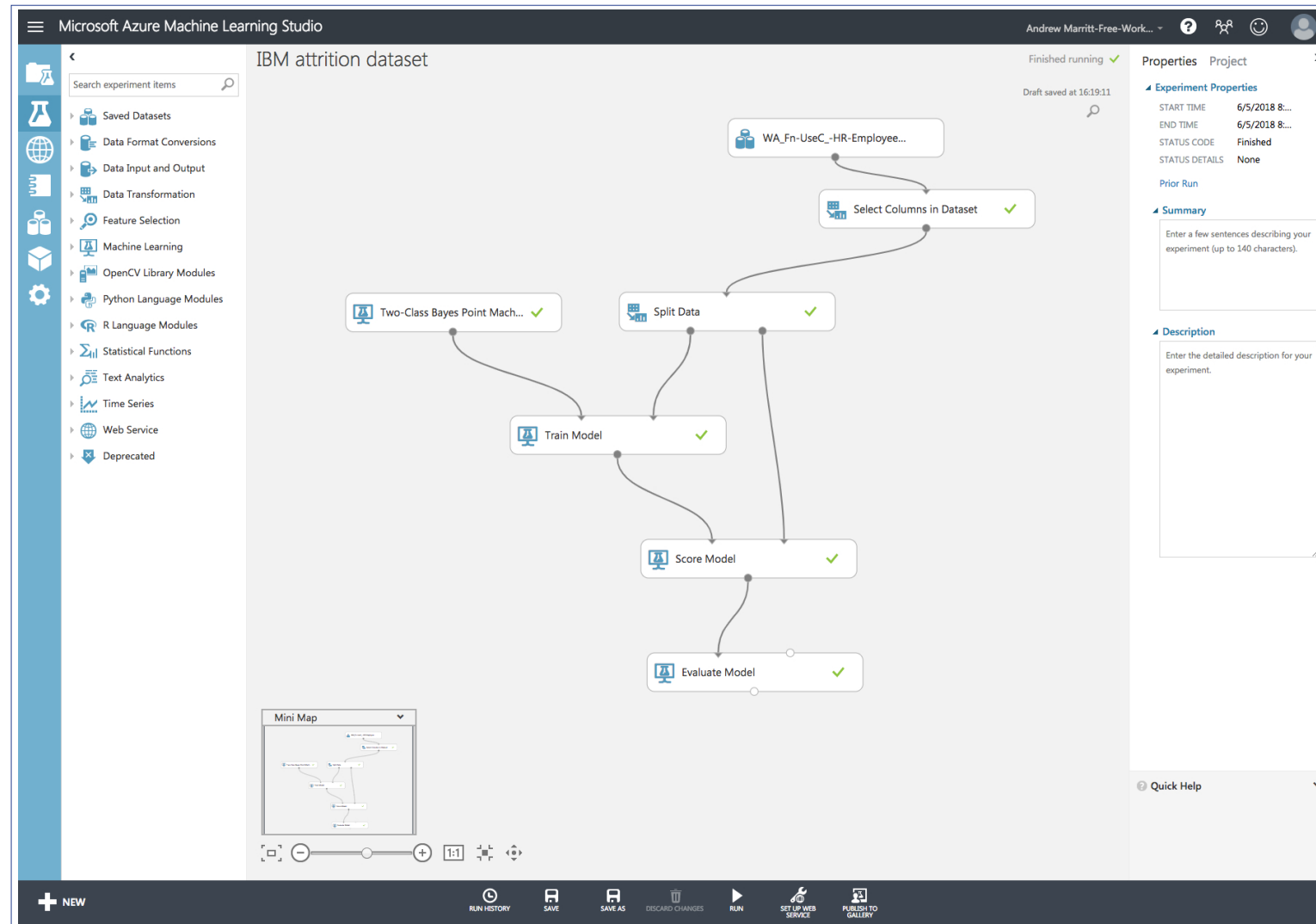
JSON:
[
  {
    "faceRectangle": {
      "top": 141,
      "left": 356,
      "width": 123,
      "height": 123
    },
    "scores": {
      "anger": 2.45541414E-05,
      "contempt": 0.000249862962,
      "disgust": 4.51454434E-05,
      "fear": 0.001153976,
      "happiness": 5.58101638E-05,
      "neutral": 0.004939176,
      "sadness": 1.091316E-05,
      "surprise": 0.993520558
    }
  },
  {
    "faceRectangle": {
      "top": 157,
      "left": 216,
      "width": 87,

```

Other tools exist

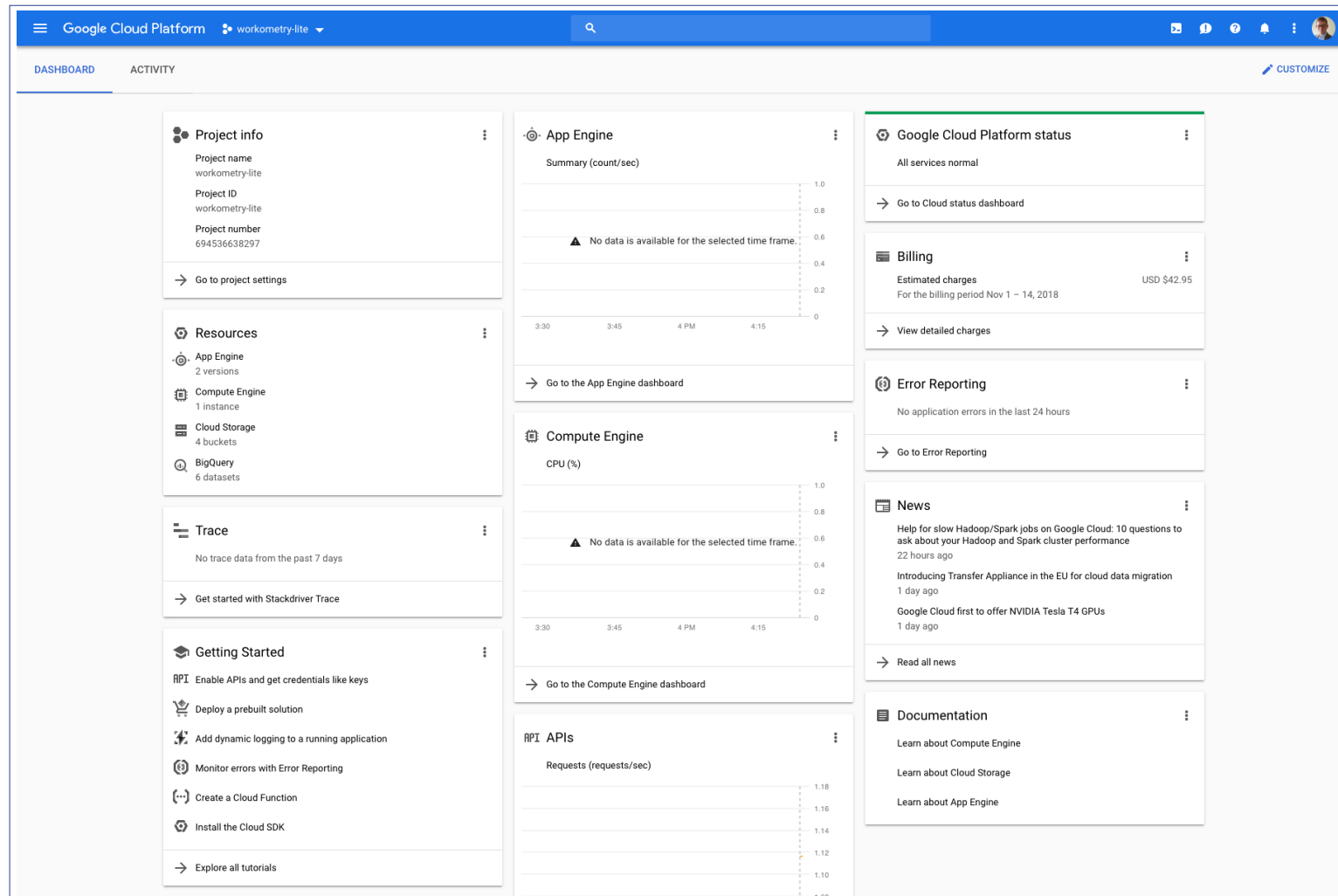
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When I teach predictive modelling we use Microsoft's Azure Machine Learning Studio



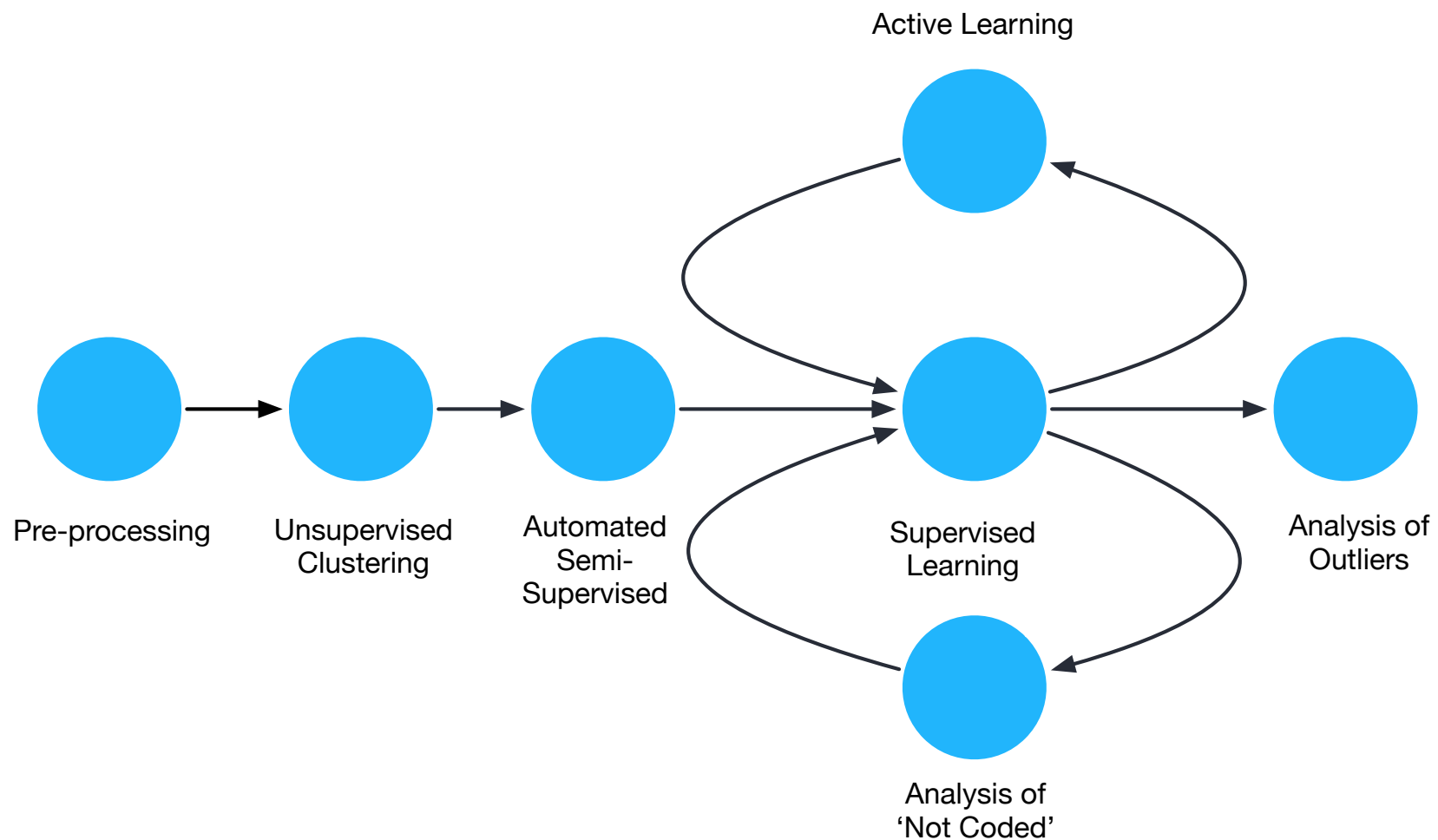
When your data gets too big for your computer

Cloud computing offers on-demand data science capacity. Rent what you need just when you need it.



How we use a data science approach

A highly-simplified representation of our overall text coding process.



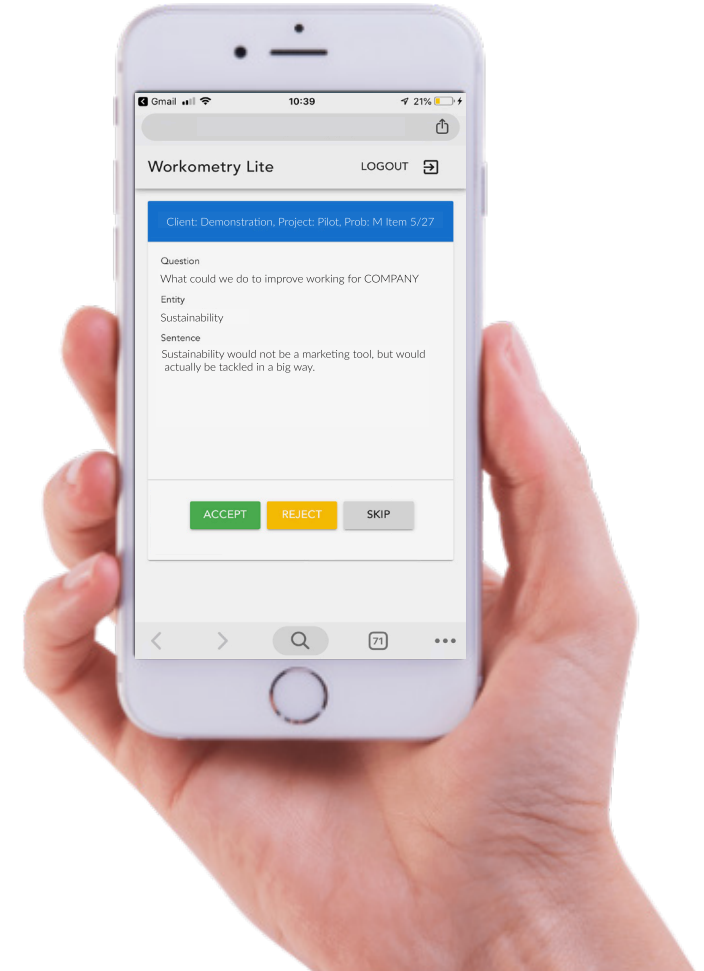
How we use a data science approach

Building and deploying internal tools to bring machine learning models to domain experts

Data Scientists are expensive

Domain knowledge is key

We build internal tools to let domain experts tune the models



Advice for working with data scientists

To make things go well requires effort from both sides.



Define the
problem, not the
solution

Be explicit
about your
assumptions

Don't
underestimate
the time it takes

Represent the
voice of the user

Be prepared to
learn (and listen)



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