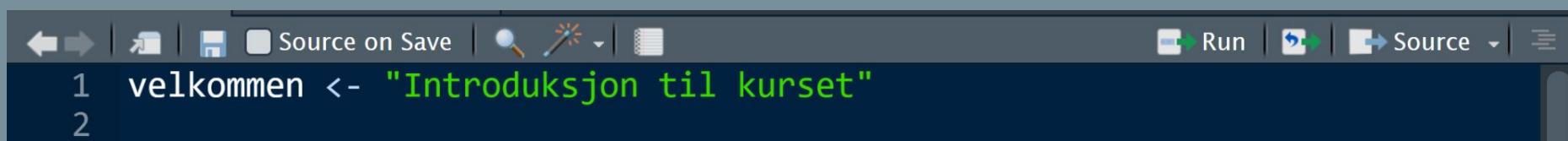


SOK-1004 ØKONOMISKE EMNER OG PROGRAMMERING



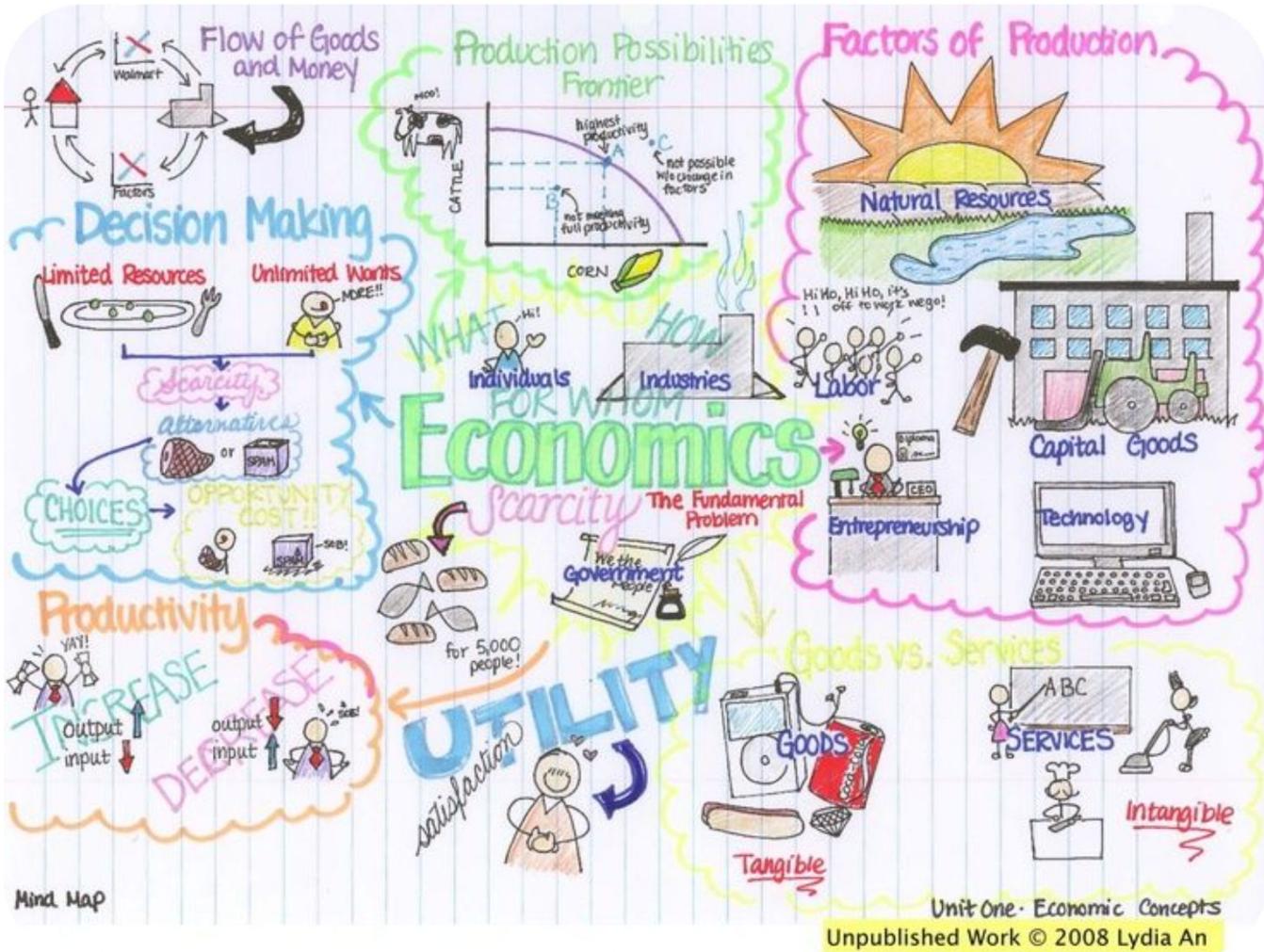
A screenshot of a Jupyter Notebook interface. The top bar features various icons for file operations like back, forward, and save, along with a "Source on Save" button, a search icon, and a refresh icon. On the right side of the top bar are buttons for "Run" (with a green arrow), "Source" (with a blue arrow), and a dropdown menu. The main area displays two code cells. Cell 1 contains the text "velkommen <- "Introduksjon til kurset"" in green, and cell 2 is empty.

```
1 velkommen <- "Introduksjon til kurset"
2
```



ECONOMIST + DATA SCIENTIST

Hva består økonomifaget av?



[RADIO](#)[BOOKS](#)[LECTURES](#)[ABOUT](#)[EXTRAS](#)[LIVE](#)[GIFTS](#)[CONTACT US](#)

Nap Time for Everyone! (Ep. 468)

The benefits of sleep are by now well established, and yet many people don't get enough. A new study suggests we should channel our inner toddler and get 30 minutes of shut-eye in the afternoon. But are we ready for a napping revolution?

July 7, 2021 @ 11:00pm

by STEPHEN J. DUBNER

2 COMMENTS

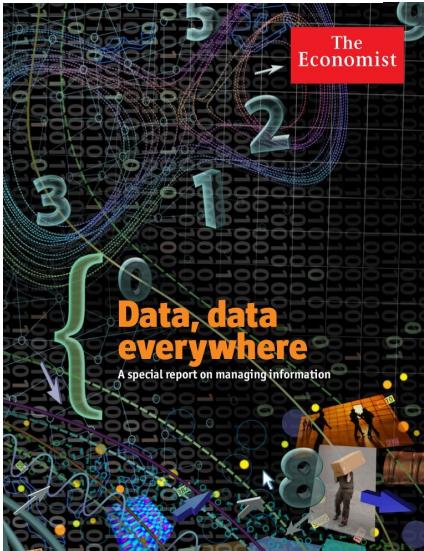


FREAKONOMICS RADIO

[SUBSCRIBE NOW](#)



Feb 27th 2010 edition >



The data deluge | Feb 27th 2010 | The Economist

What is data science?

The future belongs to the companies and people that turn data into products.

By Mike Loukides. June 2, 2010

We've all heard it: according to Hal Varian, statistics is the next sexy job. Five years ago, in What is Web 2.0, Tim O'Reilly said that "data is the next Intel Inside." But what does that statement mean? Why do we suddenly care about statistics and about data?

In this post, I examine the many sides of data science – the technologies, the companies and the unique skill sets.

The web is full of "data-driven apps." Almost any e-commerce application is a data-driven application. There's a database behind a web front end, and middleware that talks to a number of other databases and data services (credit card processing companies, banks, and so on). But merely using data isn't really what we mean by "data science." A data application acquires its value from the data itself, and creates more data as a result. It's not just an application with data; it's a data product. Data science enables the creation of data products.



Maps are data made into a product.
(source: New York Public Library)

The Age of Big Data

By STEVE LOHR

Published: February 11, 2012

A large grid of binary digits (0s and 1s) arranged in a roughly triangular shape, representing a massive dataset.

[Click Here To Access!](#)

The New York Times
Sunday Review

POPULAR SCIENCE

THE
FUTURE
NOW

THE CONTROL CENTERS

Using Data to Feed the World,
Solve Cold Cases, Battle Malware,
Predict Our Fate p.52

OFFICER ALGORITHM

Can a Crime Be Prevented
Before It Begins? p.38

NEW WAYS OF SEEING

A Gallery of
Extraordinary
Infographics p.69

SPECIAL ISSUE

DATA IS POWER

HOW INFORMATION IS DRIVING THE FUTURE

PLUS

Juan Enriquez
Reprograms Life
p.31

James Gleick
Unsplits the Bit
p.58

AND
Lawrence
Weschler
Questions the
Cloud
p.76



Data Science som vitenskap [De Veaux et al. (2017)]

“science of planning for, acquisition, management, analysis of, and inference from data”

“... emphasis on using data to describe the world”

“Data science is inherently interdisciplinary. Working with data requires the mastery of a variety of skills and concepts, including many traditionally associated with the fields of statistics, computer science, and mathematics.”

“Data at the Core”

“Analytical (Computational and Statistical) Thinking”

ADDITIONAL SKILLS

CODING CAPABILITIES



Ikke alltid nødvendig å være “big” for å være relevant

Forbes

Apr 30, 2014, 07:55am EDT

How Big Data Can Predict The Wine Of The Century



SAP BRANDVOICE | Paid Program
Innovation

By James Marland, Vice President, Network Growth, Ariba – an SAP Company

While Moneyball, and Brad Pitt's good looks, became the face that launched a thousand big data blog posts, I've often thought about other examples, which might appeal to those who prefer to pour a glass of wine versus pore over box scores and Hadoop clusters. This begs the question: Can Big Data help me find a good bottle of wine?

According to the book “[Supercrunchers](#)”, the answer is yes. Imagine trying to determine if 2013 will be a good year for cabernet because you want to invest in wine futures or want to place an early order for a few cases of the good stuff from your wine merchant. The usual approach is to ask a wine connoisseur who has decades of experience and uses the “swish and spit” technique to expose complex wine flavors.

How an Economist Cracked the Wine Business by Predicting Prices With 90% Accuracy

Ashenfelter could've brought down an empire using a simple math formula

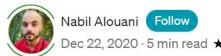


Illustration created by the author from a Twitter post.

Orley Ashenfelter's adventure started with a revelation at a wine store. While holding a bottle he couldn't recognize, Ashenfelter knew he had two options:

1. Roll another \$20 dice at the risk of a disappointing taste.
2. Spend half his salary to guarantee a fine drink.

Predicting the Quality and Prices of Bordeaux Wine

Orley Ashenfelter Author Notes

The Economic Journal, Volume 118, Issue 529, 1 June 2008, Pages F174–F184, <https://doi-org.mime.uit.no/10.1111/j.1468-0297.2008.02148.x>

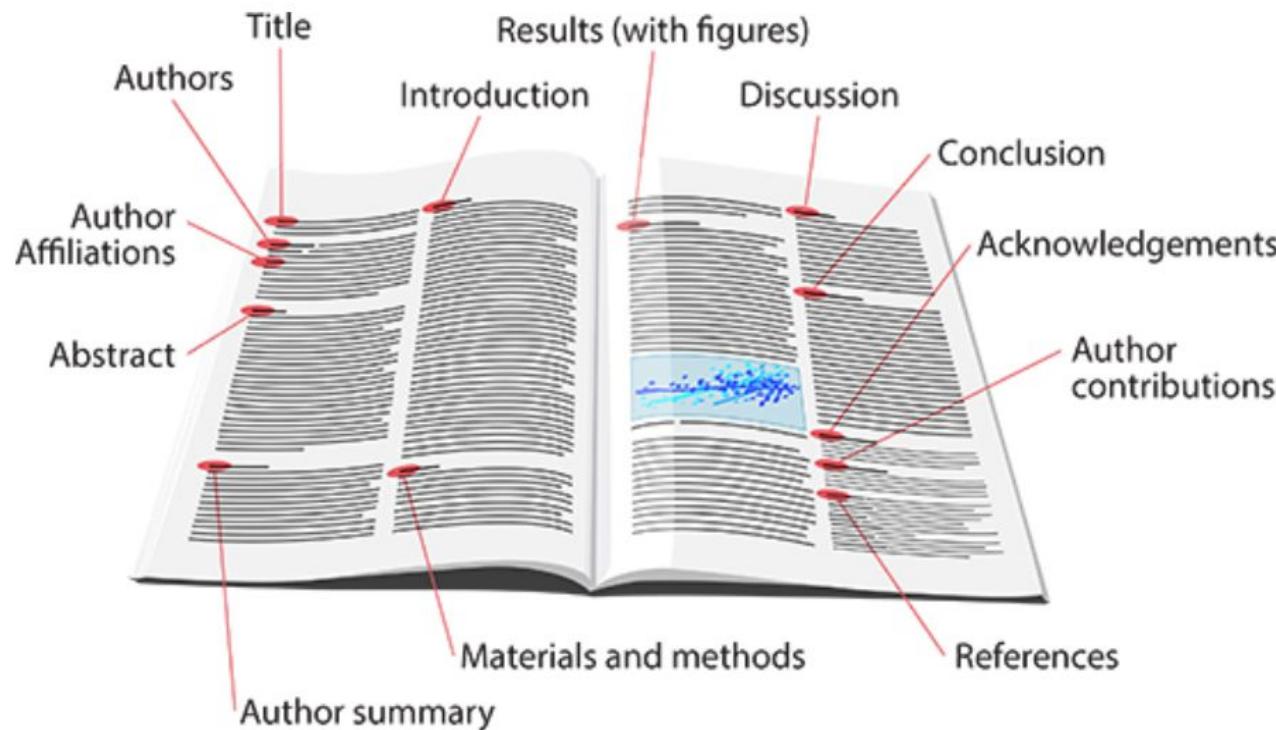
Published: 29 May 2008

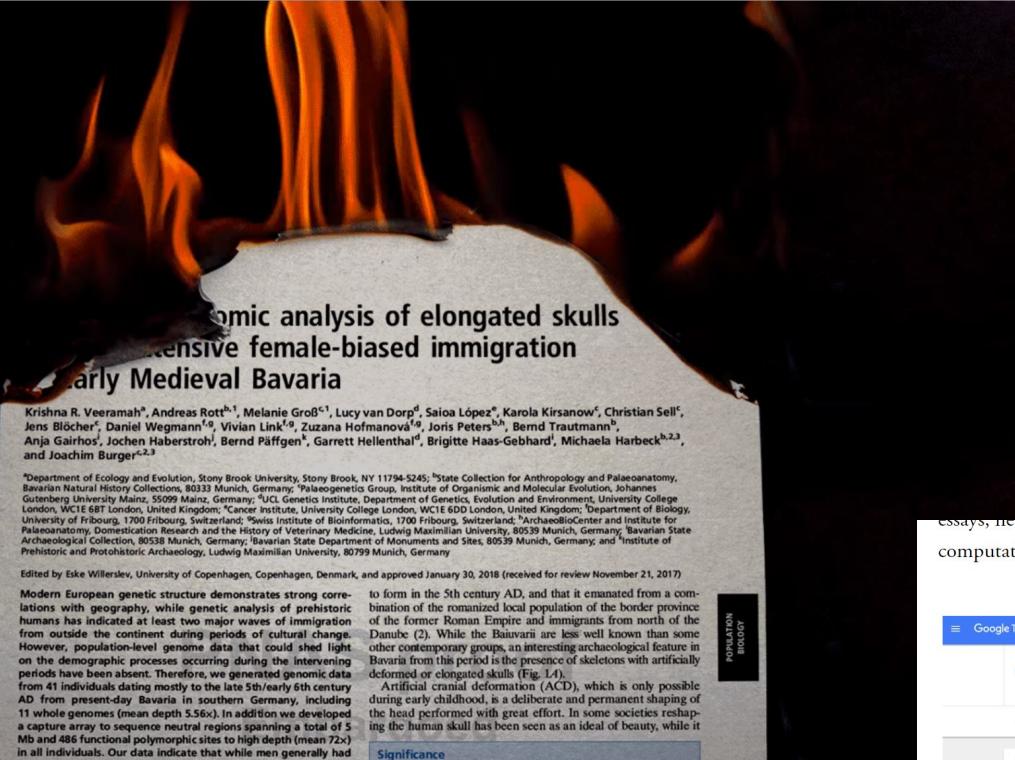
Table 2 Regressions of Log Wine Price on Climate Variables

Independent variables	(1)	(2)
Age of vintage	0.0354 (0.0137)	0.0238 (0.0137)
Average temperature over growing season (April–September)	- (-0.0001)	0.6160 (0.0001)
Rain in August	- (-0.0001)	-0.00386 (-0.0001)
Rain in the months preceding the vintage (October–March)	- (-0.0001)	0.00117 (0.0001)
Average temperature in September	- (-0.0001)	- (-0.0001)
R-squared	0.212	0.828
Root mean squared error	0.575	0.287

Notes. All regressions are of the (logarithm of) the price of different vintages of a portfolio of Bordeaux chateau wines on climate variables, using as data the vintages of 1952–80, excluding the 1954 and 1956 vintages, which are now rarely sold; all regressions contain an intercept, which is not reported. Standard errors are in parentheses.

Anatomi til en vitenskapelig artikkel





PNAS / Richard Goerg / Getty / The Atlantic

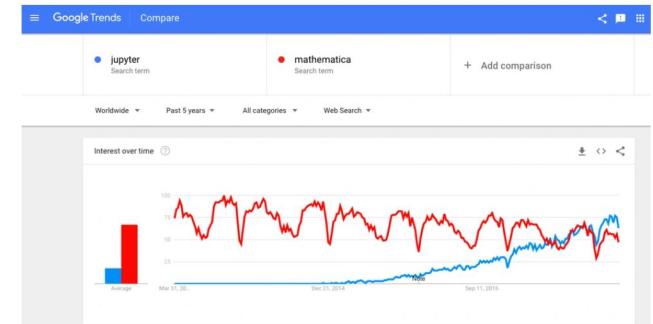
SCIENCE

THE SCIENTIFIC PAPER IS OBSOLETE

Here's what's next.

By James Somers

essays, etc. writes, “At the core of computational essays is the idea of expressing computational thoughts using the Wolfram Language.”



Google Trends

Which, who knows, might well be true—maybe computational notebooks will only take root if they're backed by a single super-language, or by a

Interaktiv vitenskapelig artikkel (2011)

Scientific Communication As Sequential Art

Bret Victor / May 24, 2011

This page presents a scientific paper that has been redesigned as a sequence of illustrations with captions. This comic-like format, with tightly-coupled pictures and prose, allows the author to depict and describe simultaneously — show and tell.

It is based on Watts and Strogatz's seminal [Nature paper](#) on network theory, shown to the right. This paper was chosen because it's accessible to a broad audience, and it's very well-written — already near the limit of clarity for just prose.

Try actually reading this design instead of skimming it (it's quicker than it looks!) and consider how the illustrations make abstract descriptions more concrete, and help you maintain the "picture in your head".

Further discussion follows.



Graphic detail

House price data

Global house prices

Our interactive guide to housing data across the world

APR 16TH 2021



Burgernomics

The Big Mac index

Our interactive currency comparison tool

JAN 12TH 2021

The Big Mac index

Country		2000 — 2021	Under/over valued, %
Switzerland	Franc		28.8
Sweden	Krona		12.6
Norway	Krone		7.5
United States	US\$		BASE CURRENCY
Israel	Shekel		-5.5
Canada	C\$		-6.6
Euro area	Euro		-8.8
Australia	A\$		-11.9
Denmark	Krone		-13.4
New Zealand	NZ\$		-13.9
Uruguay	Peso		-15.2
Britain	Pound		-21.6

Choose a base currency
US dollar ▾

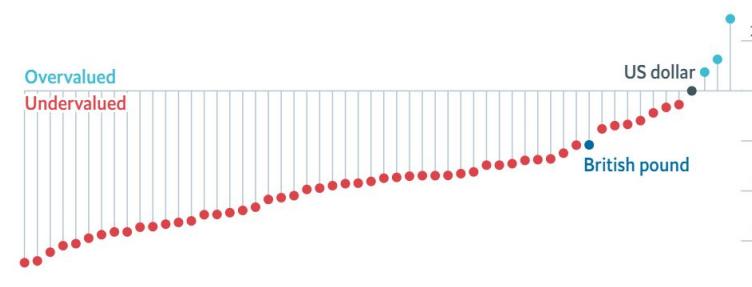
Show index at
Jan 2021 ▾

Adjust the index to account
for GDP per person

Raw index GDP-adjusted

The British pound is 22% undervalued against the US dollar

January 2021



A Big Mac costs £3.29 in Britain and US\$5.66 in the United States. The implied exchange rate is 0.58. The difference between this and the actual exchange rate, 0.74, suggests the British pound is 21.6% undervalued

<https://jupyter.uit.no>



Project Jupyter exists to develop open-source software, open-standards, and services for interactive computing across dozens of programming languages.

<https://rstudio.uit.no>

The screenshot shows the RStudio IDE interface. The top navigation bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help, and Admin. The main area has tabs for Code, Plots, Packages, and Viewer. The code editor displays R code related to a dataset named 'andy'. The console window at the bottom shows various R commands and their outputs, including statistical tests and package information. The file browser on the right shows the project structure with files like 'andy.RData' and 'andy.R'.

```
#' R. Carter HILL, William E. Griffiths and Guay C. Lim,
#' Principles of Econometrics, Fifth Edition, Wiley, 2018.
#'
# getwd()
# rm(list=ls())
#
# require(pacman)
# p_load(rockchalk, mosaic)
#
# library(car)
#
# A sample of hamburger franchises in 75 cities from Big Andy's Burger Barn.
# Data definition file: <http://www.principlesofeconometrics.com/poe5/data/def/andy.def>
# browseURL("http://www.principlesofeconometrics.com/poe5/data/def/andy.def")
#
# sales = S Monthly sales revenue ($1000s)
# price = P A price index ($) for all products sold in a given month.
# adver = A Expenditure on advertising ($1000s)
#
# Read the data
# load(url("http://www.principlesofeconometrics.com/poe5/data/rdata/andy.rdata"))
#
# Multiple regression model, Example 5.2
fit <- lm(sales ~ price + adver, data=andy)
summary(fit)
confint(fit)
andy <- andy %>% mutate(quantity=sales/price)

# sales elasticity
coef(fit)[2]*mean(~price, data=andy)/mean(~sales, data=andy) # (ds/dp)*(p/S)
```

binom.test, cor, cor.test, cov, fivenum, IQR, median, prop.test, quantile, sd, t.test, var

The following objects are masked from 'package:base':

max, mean, min, prod, range, sample, sum

Registered S3 methods overwritten by 'car':

method from lm4d influence.merMod cooks.distance.influence.merMod dfBeta.influence.merMod dfBeta.influence.merMod

Attaching package: 'car'

The following objects are masked from 'package:mosaic':

deltaMethod, logit

The following object is masked from 'package:dplyr':

recode

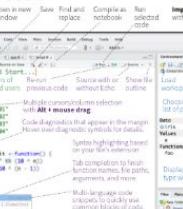
5.6972
13.7832463662769

RStudio IDE : : CHEAT SHEET

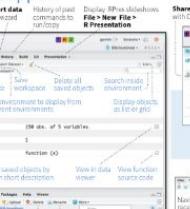
Documents and Apps



Write Code



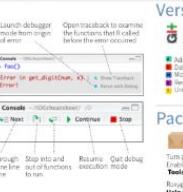
R Support



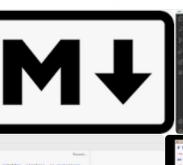
Pro Features



Debug Mode



R Studio

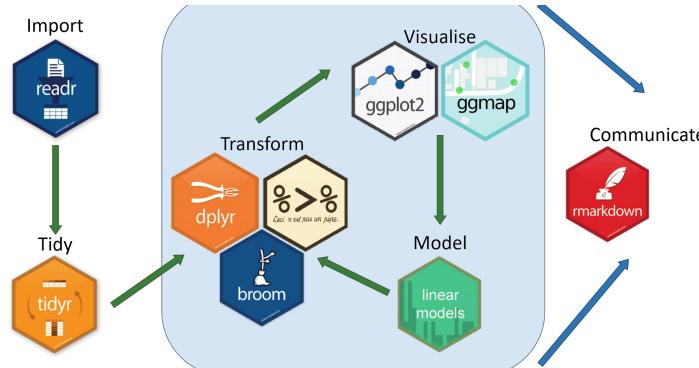
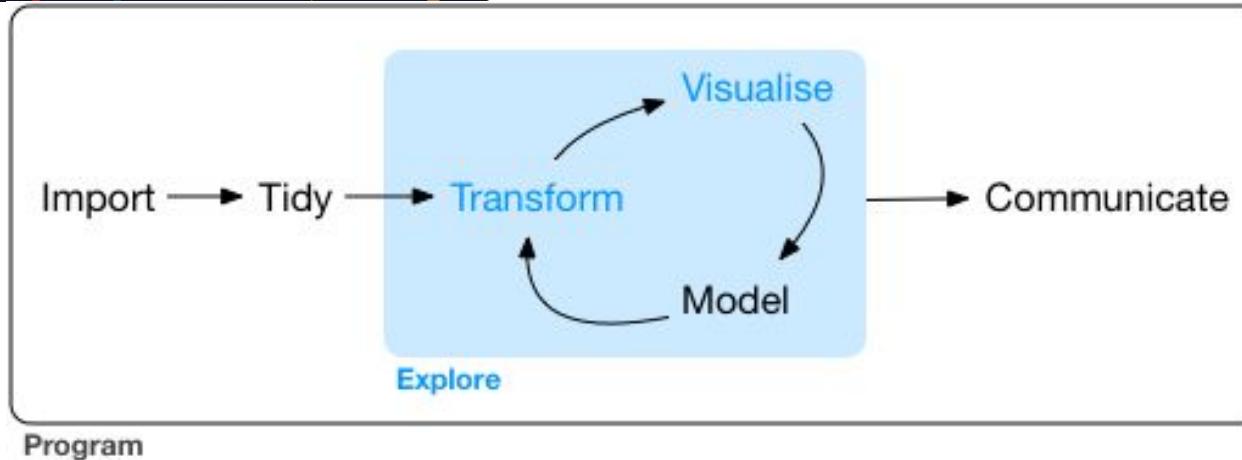


Markdown

Oversatt fra engelsk - Markdown er et lett markeringsspråk for å lage formaterat tekst ved hjelp av en redigeringssprogram for ren tekst. John Gruber og Aaron Swartz opprettet Markdown i 2004 som et markeringsspråk som appellerer til menneskelige leser i kildekodeformen. [Wikipedia \(engelsk\)](#)

tidyverse

Hadley Wickham's model



Versjonskontroll



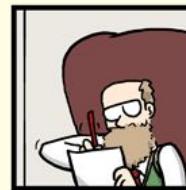
"FINAL".doc



↑ FINAL.doc!



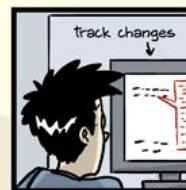
↑ FINAL_rev.2.doc



↑ FINAL_rev.6.COMMENTS.doc



↑ FINAL_rev.8.comments5.CORRECTIONS.doc



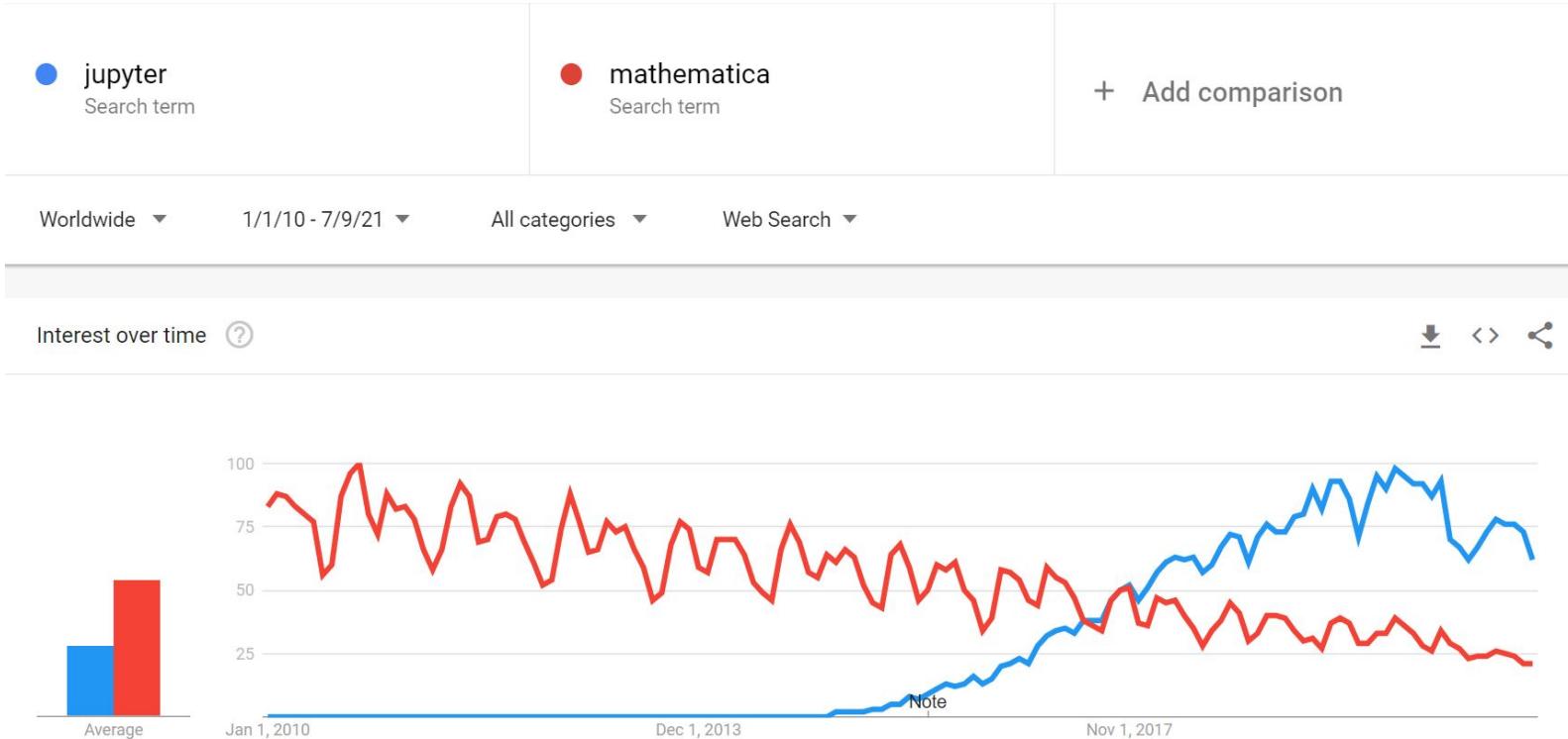
↑ FINAL_rev.18.comments7.corrections9.MORE.30.doc



↑ FINAL_rev.22.comments49.corrections.10.#@\$%WHYDIDICOMETOGRADSSCHOOL?????.doc

JORGÉ CHAM © 2012

Replisering av Google trends søk - The Atlantic



Noe bedre?

Google trends - søkeord over tid

søkeord — jupyter — mathematica

