

ML Week

Bonjour !

Jeff Abrahamson

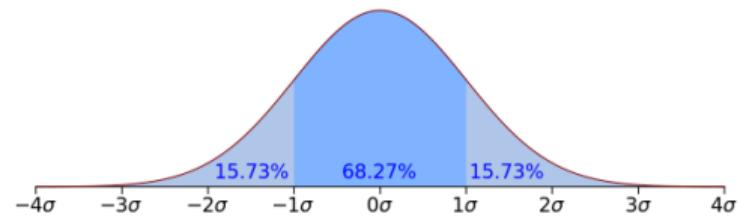
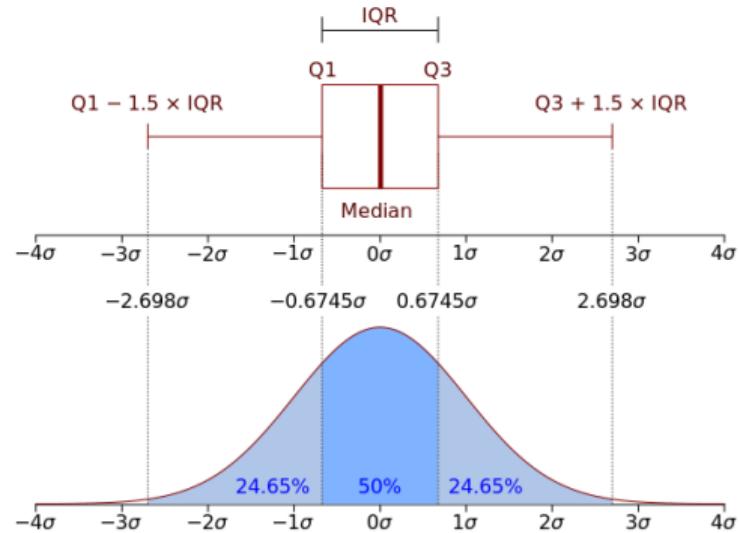
23–25 novembre 2016

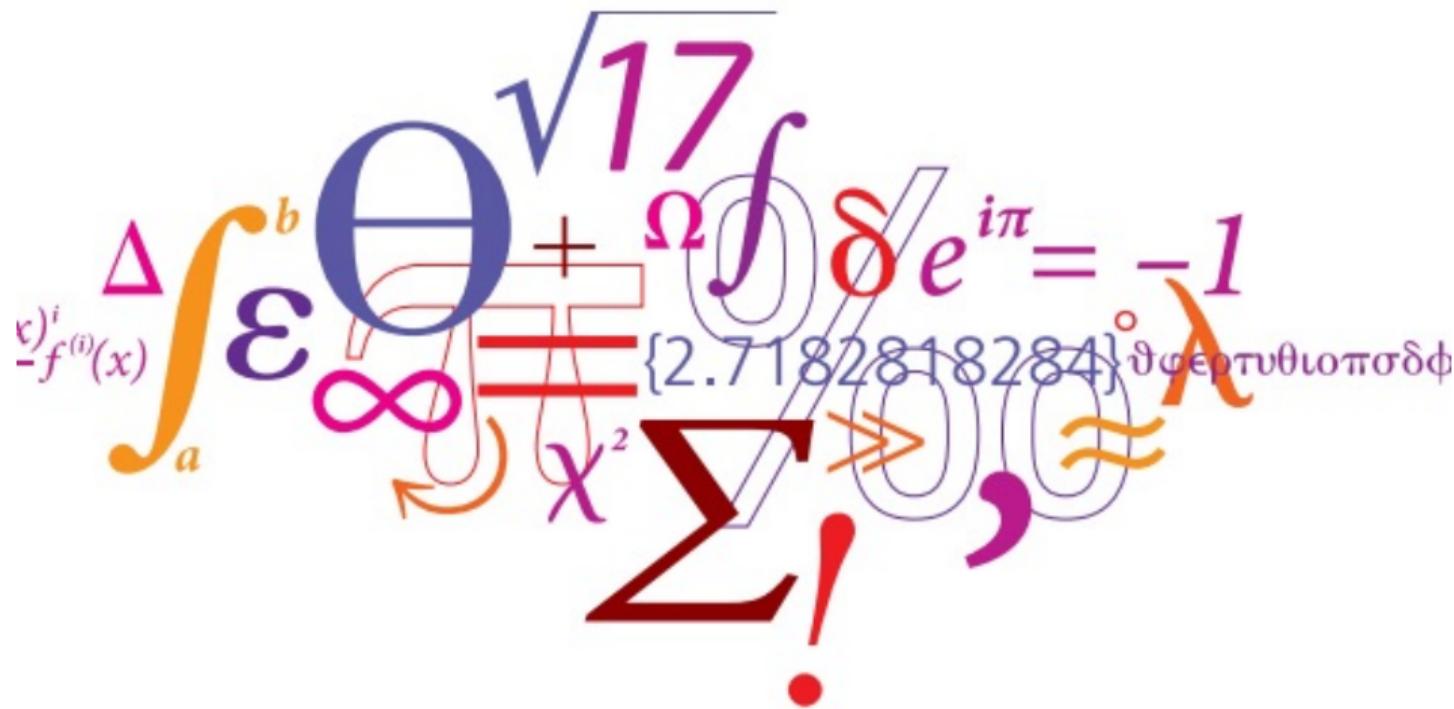
Machine Learning

Apprentissage automatique

Data Science

Statistiques

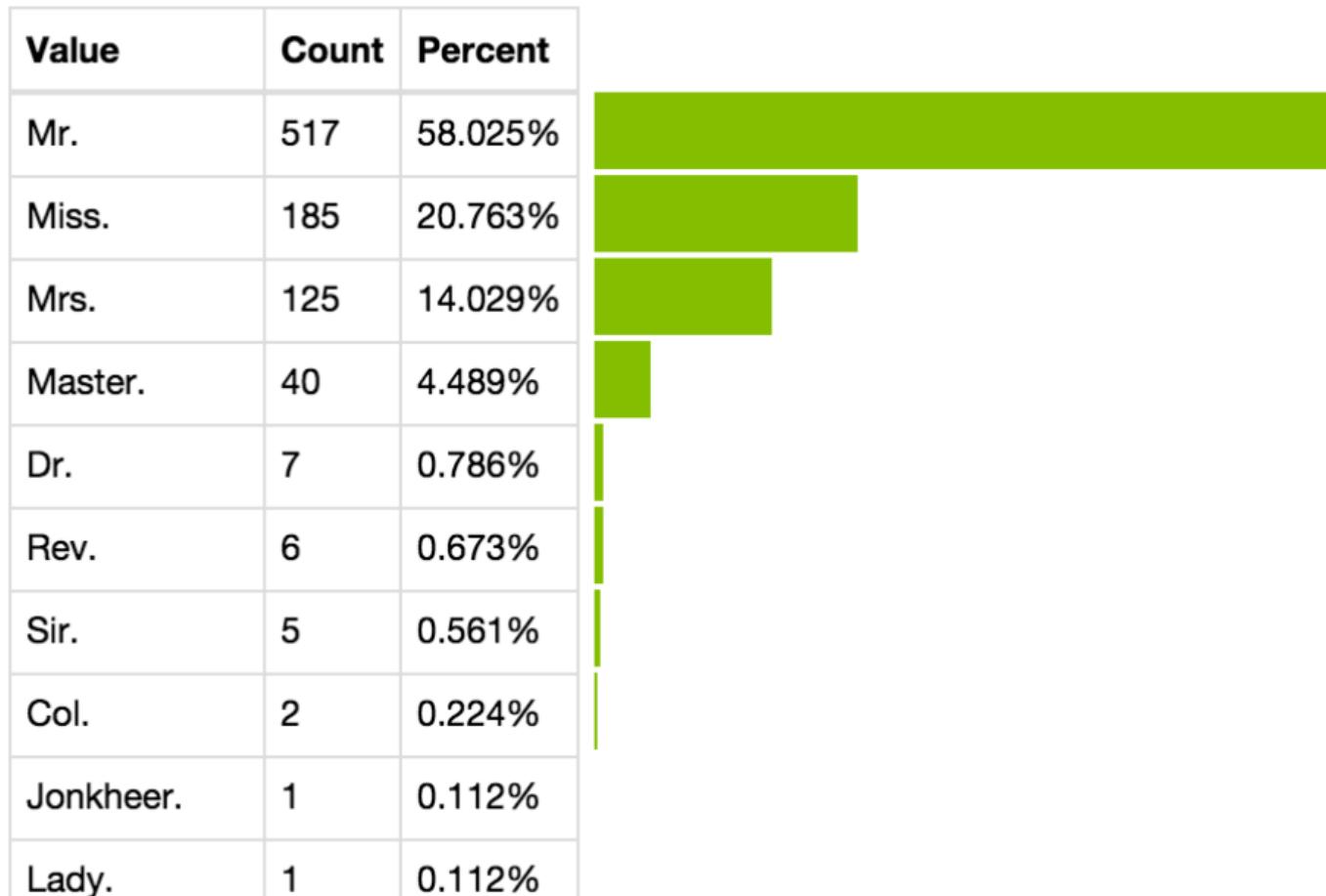


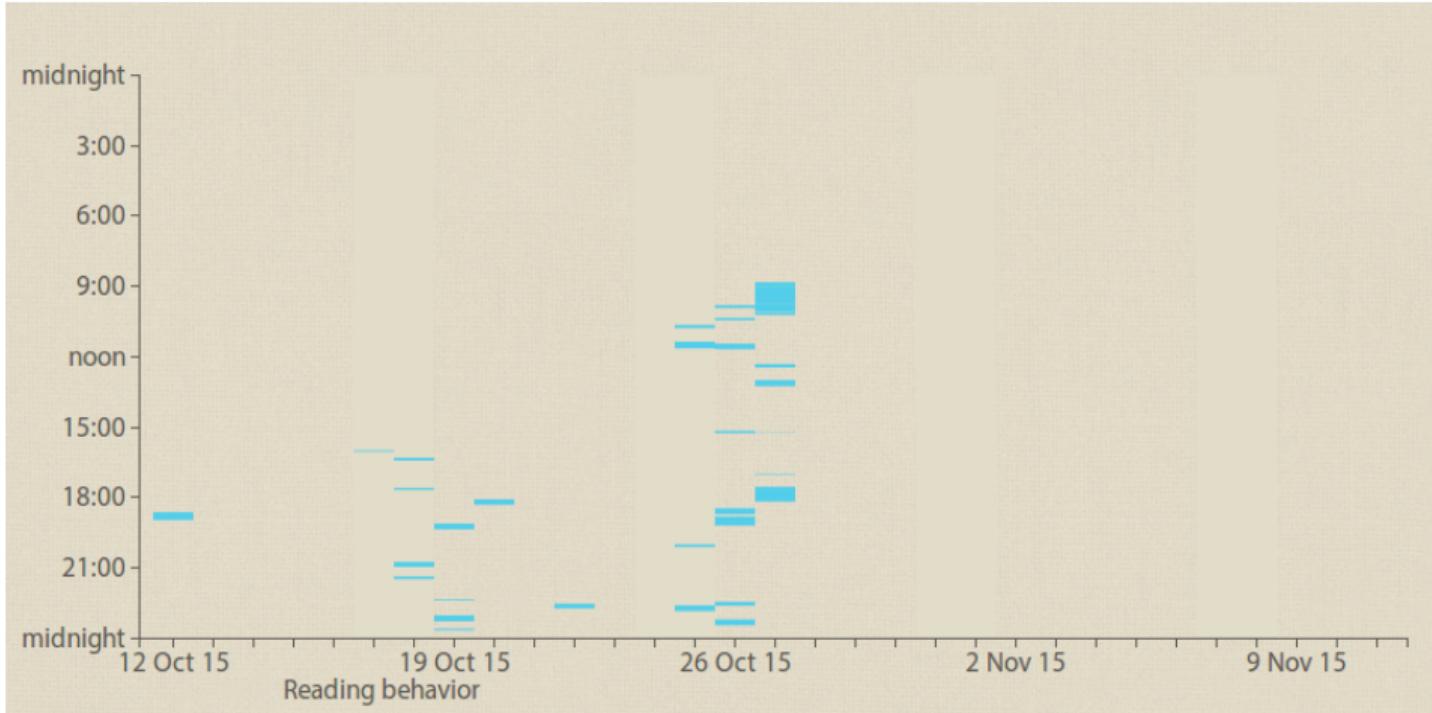


Espace vectoriel

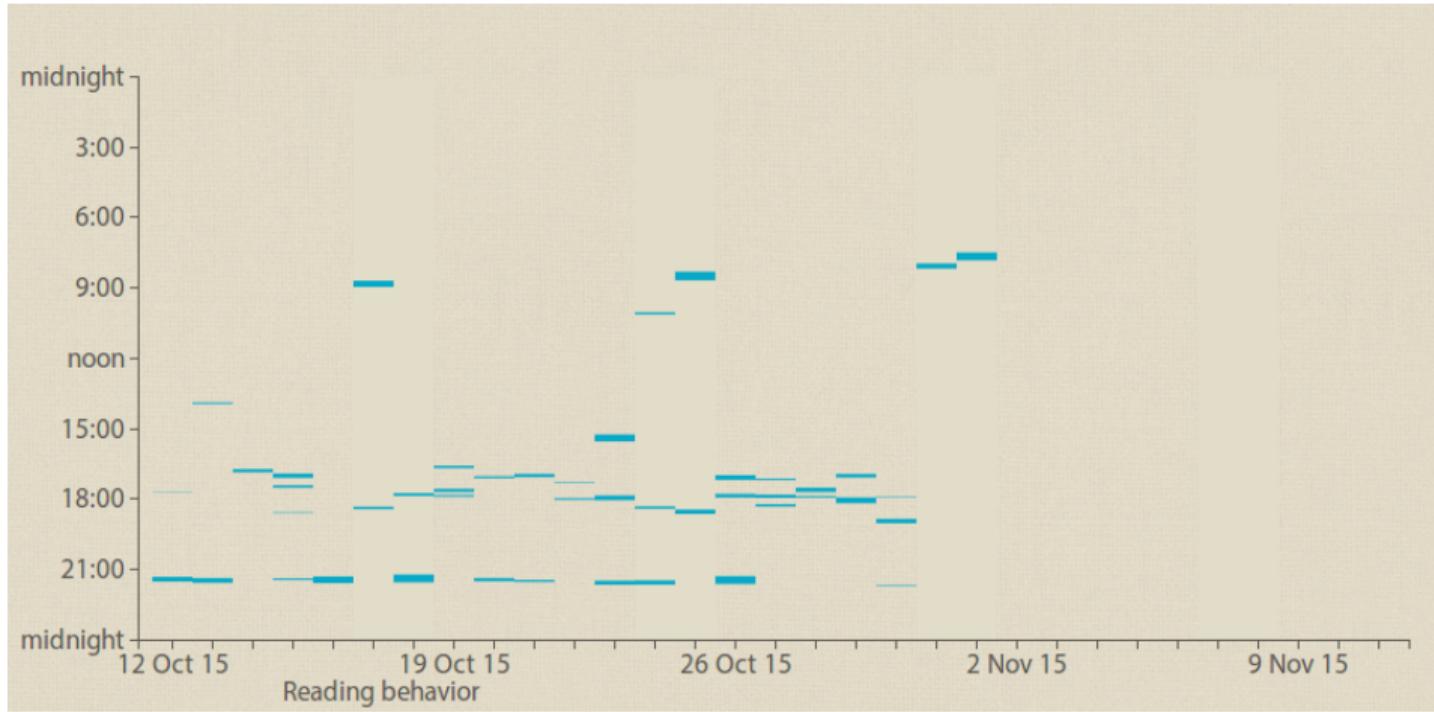
Critères

Feature engineering

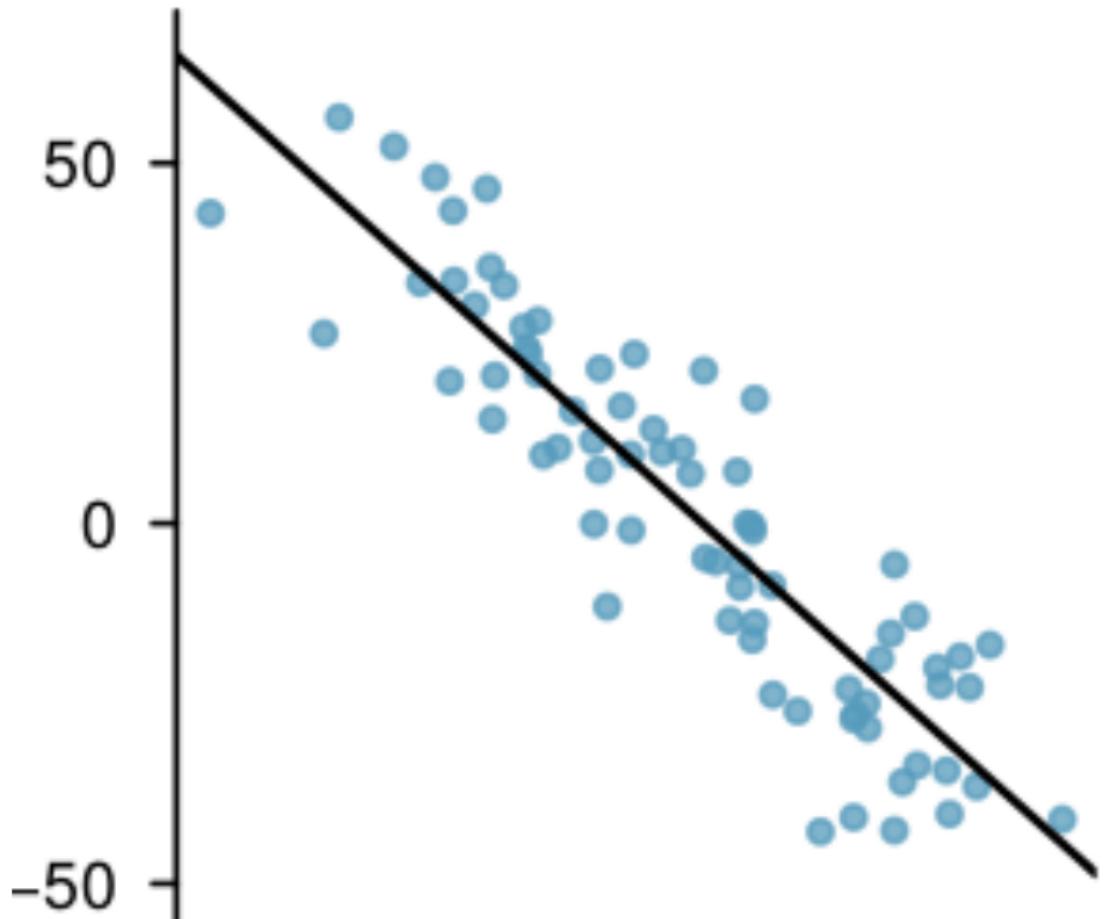


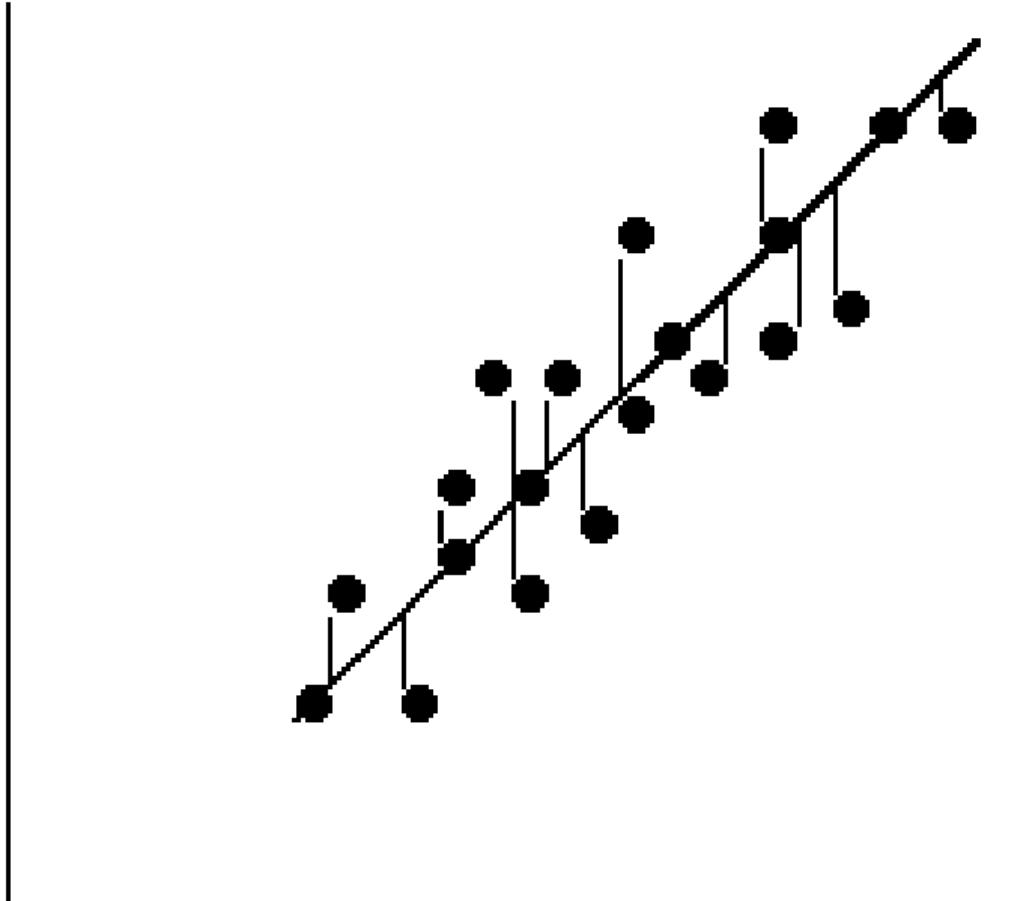


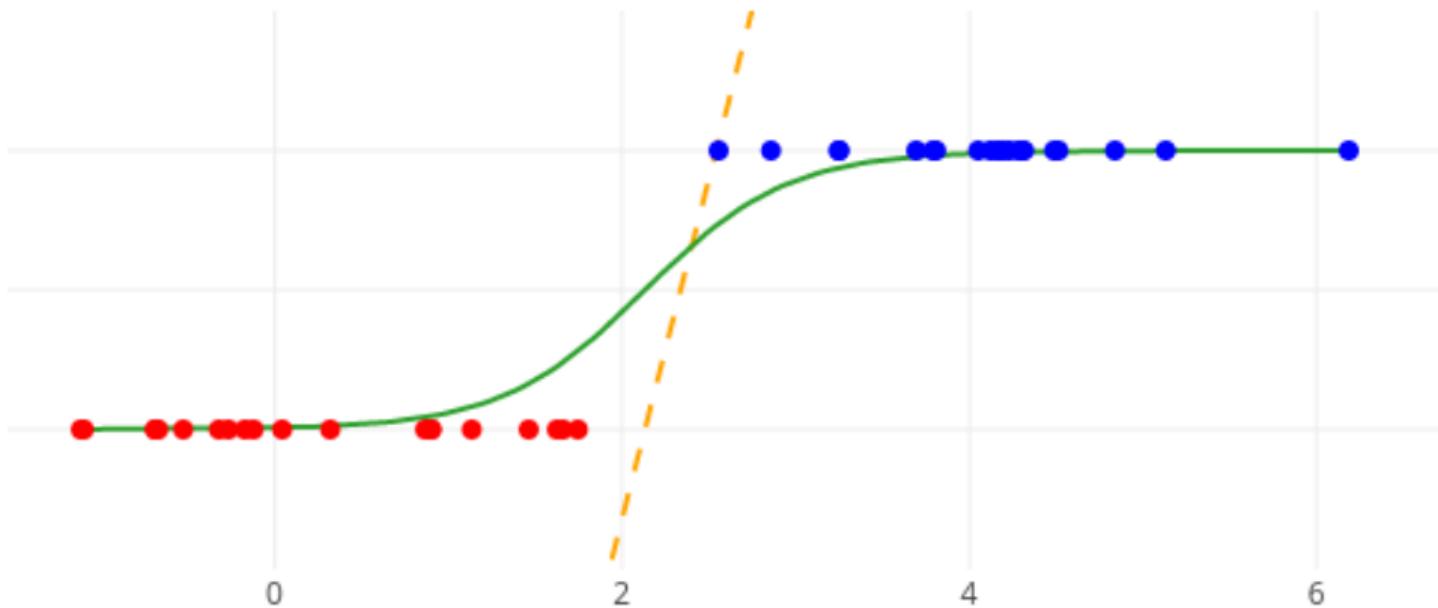
Jellybooks

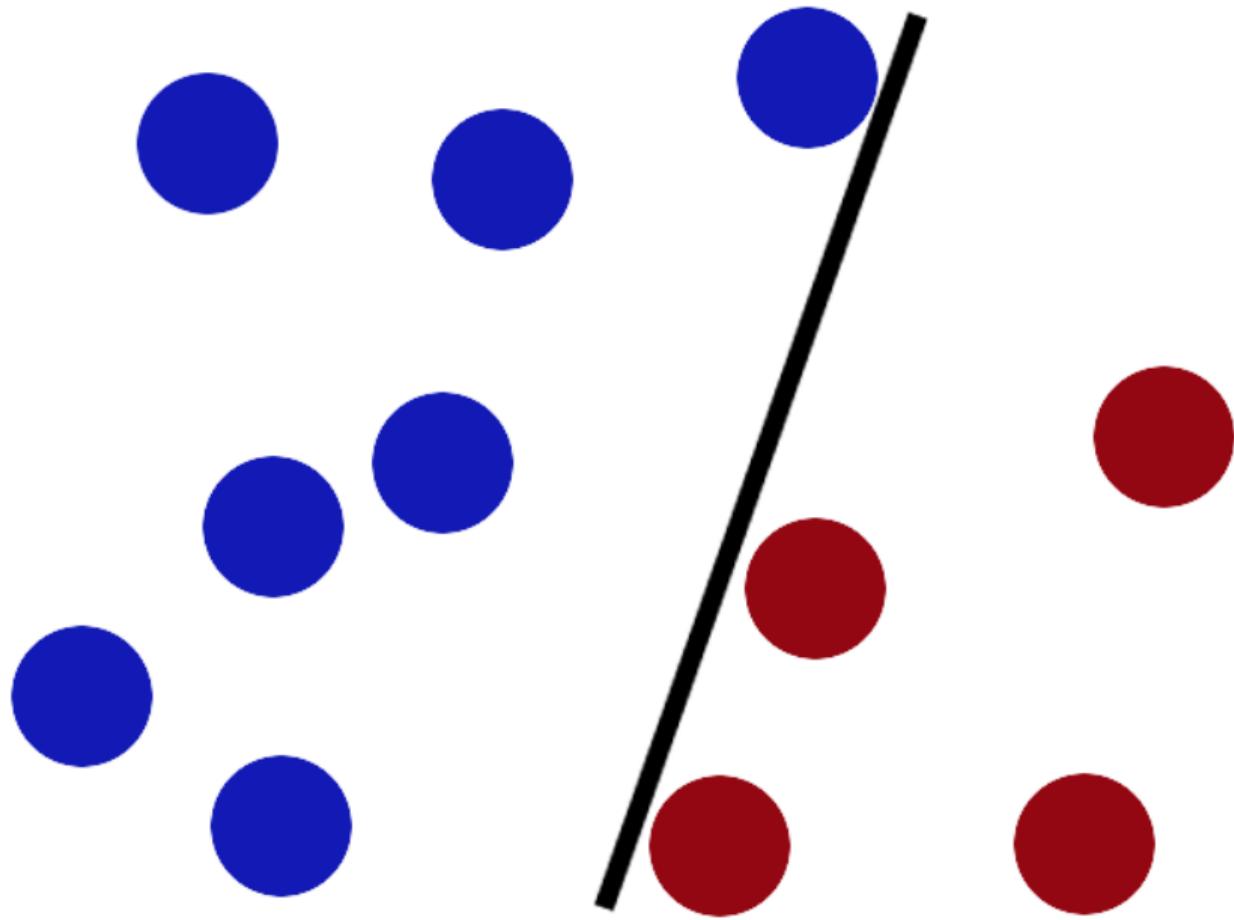


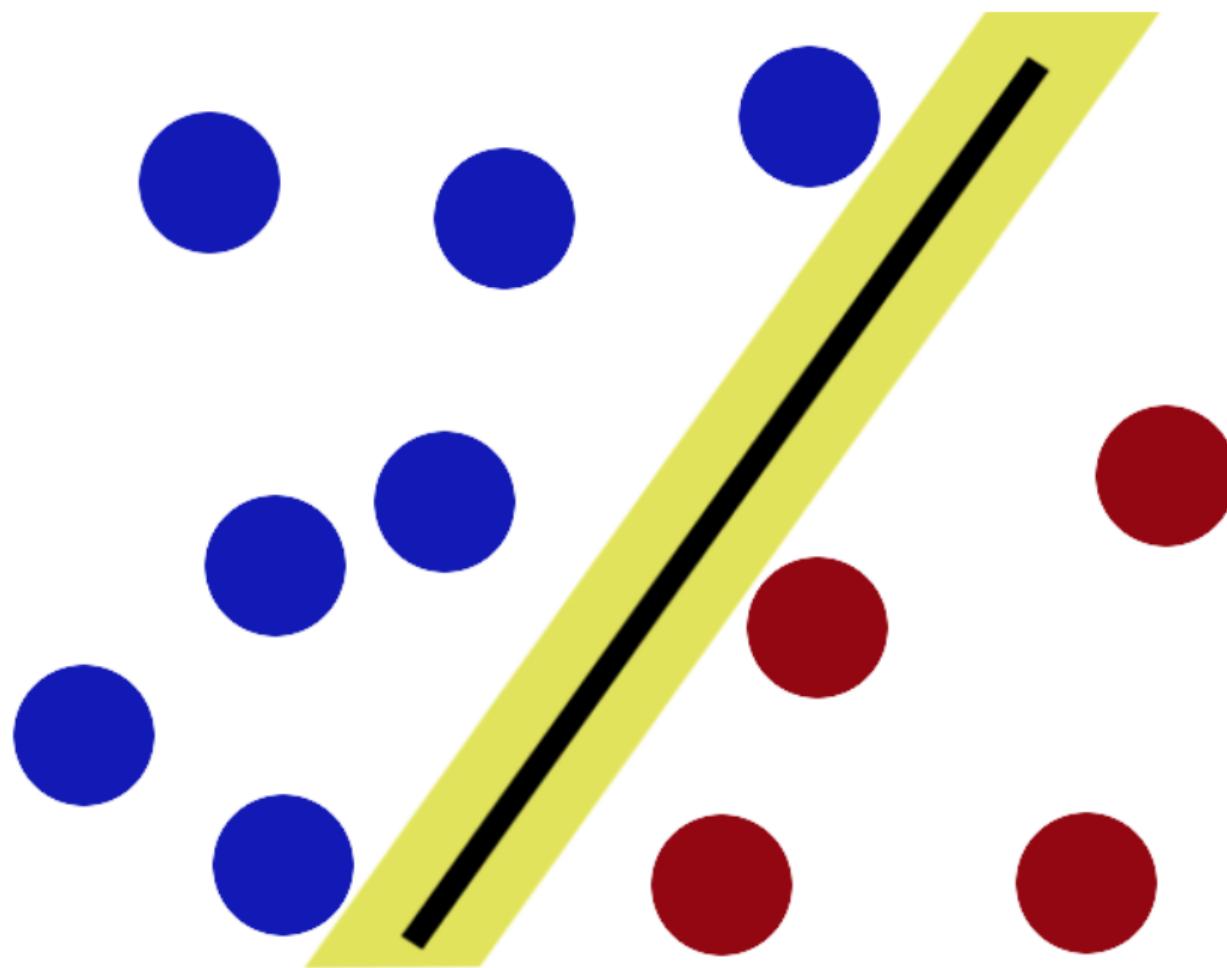
Jellybooks

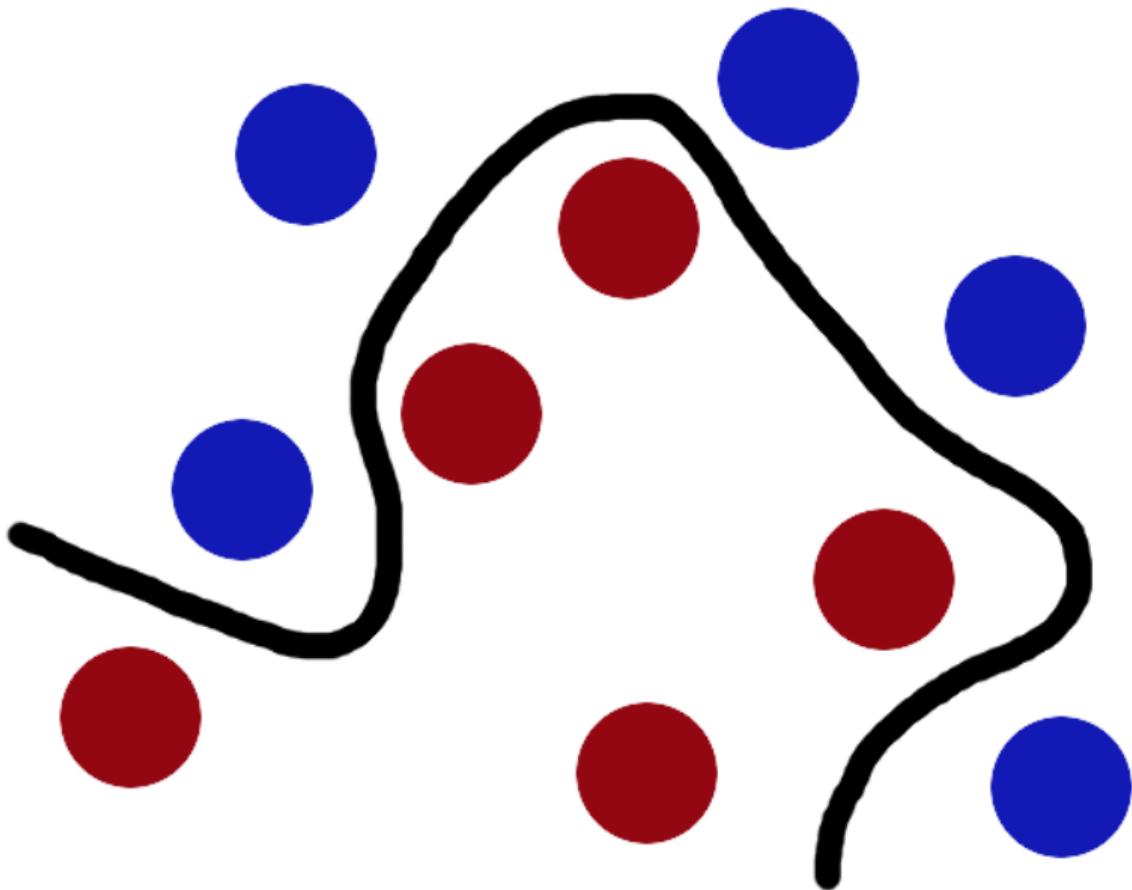


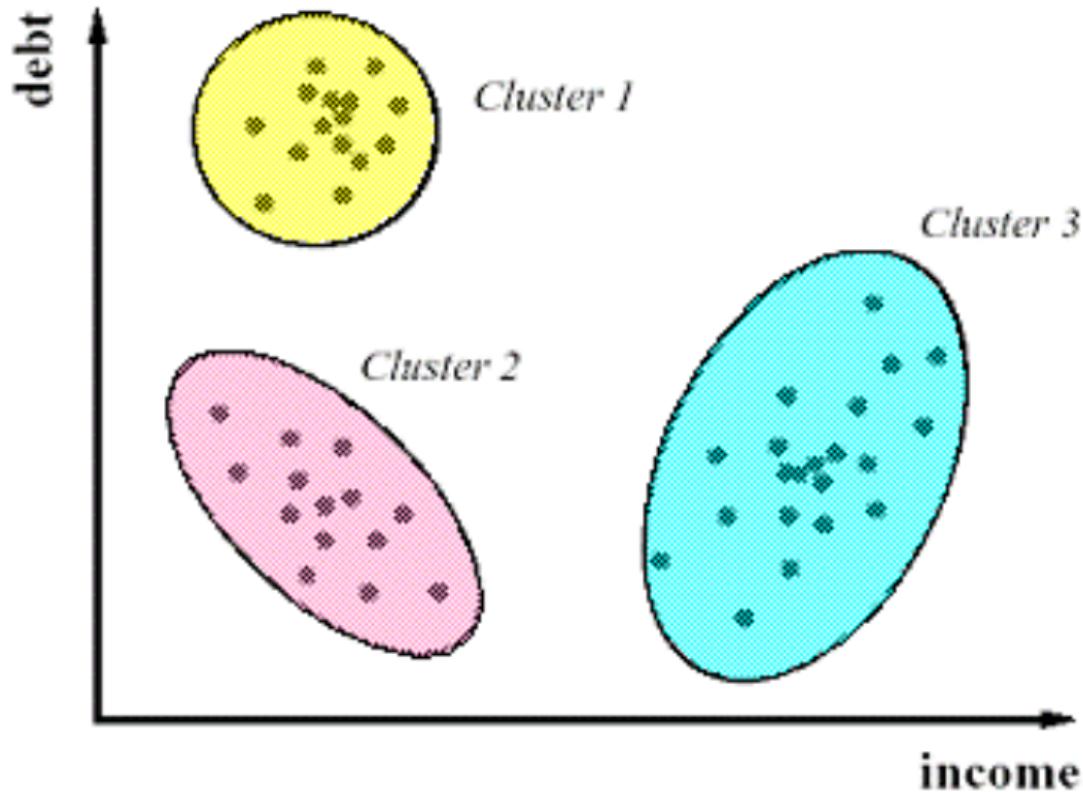




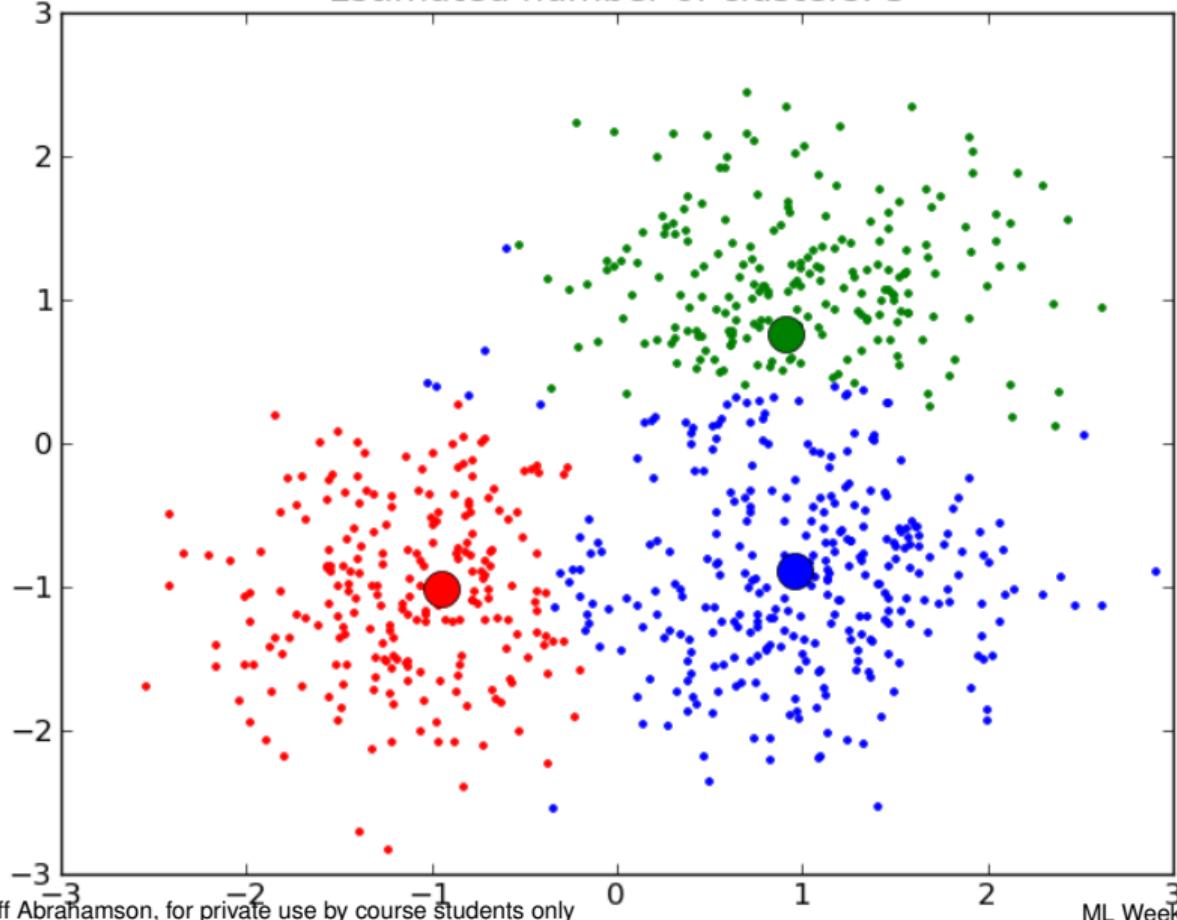


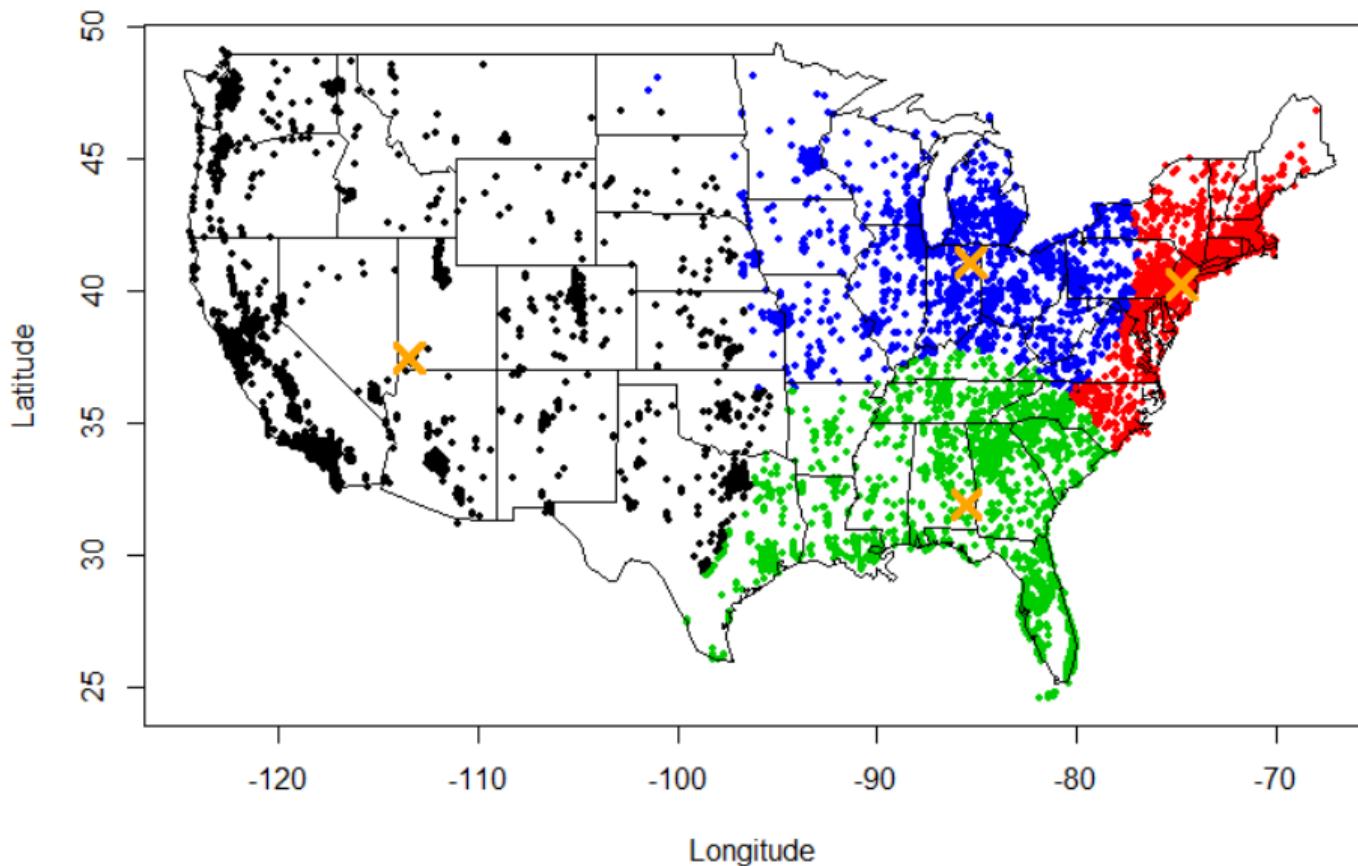




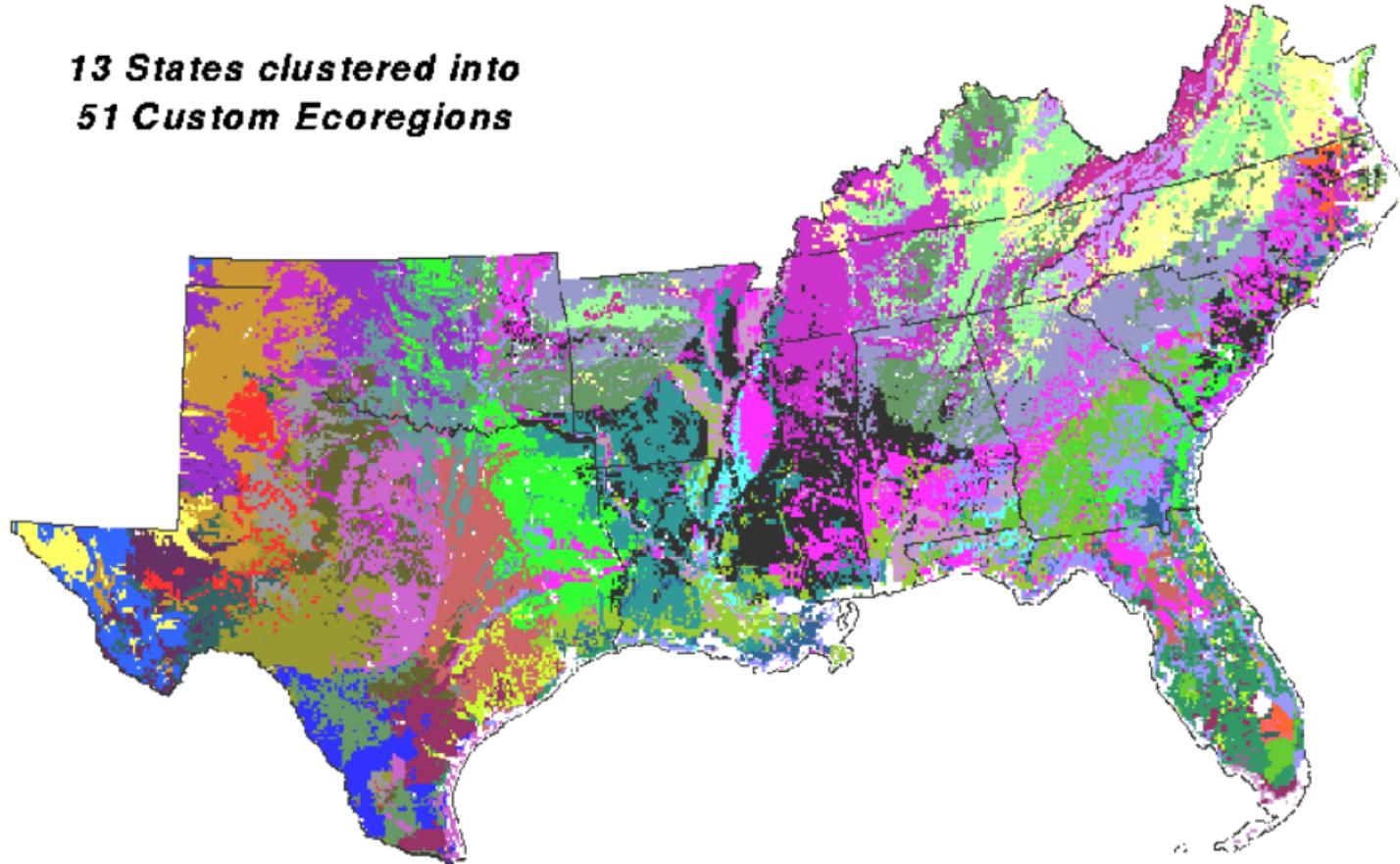


Estimated number of clusters: 3





*13 States clustered into
51 Custom Ecoregions*





Eddie Bell @ Lyst



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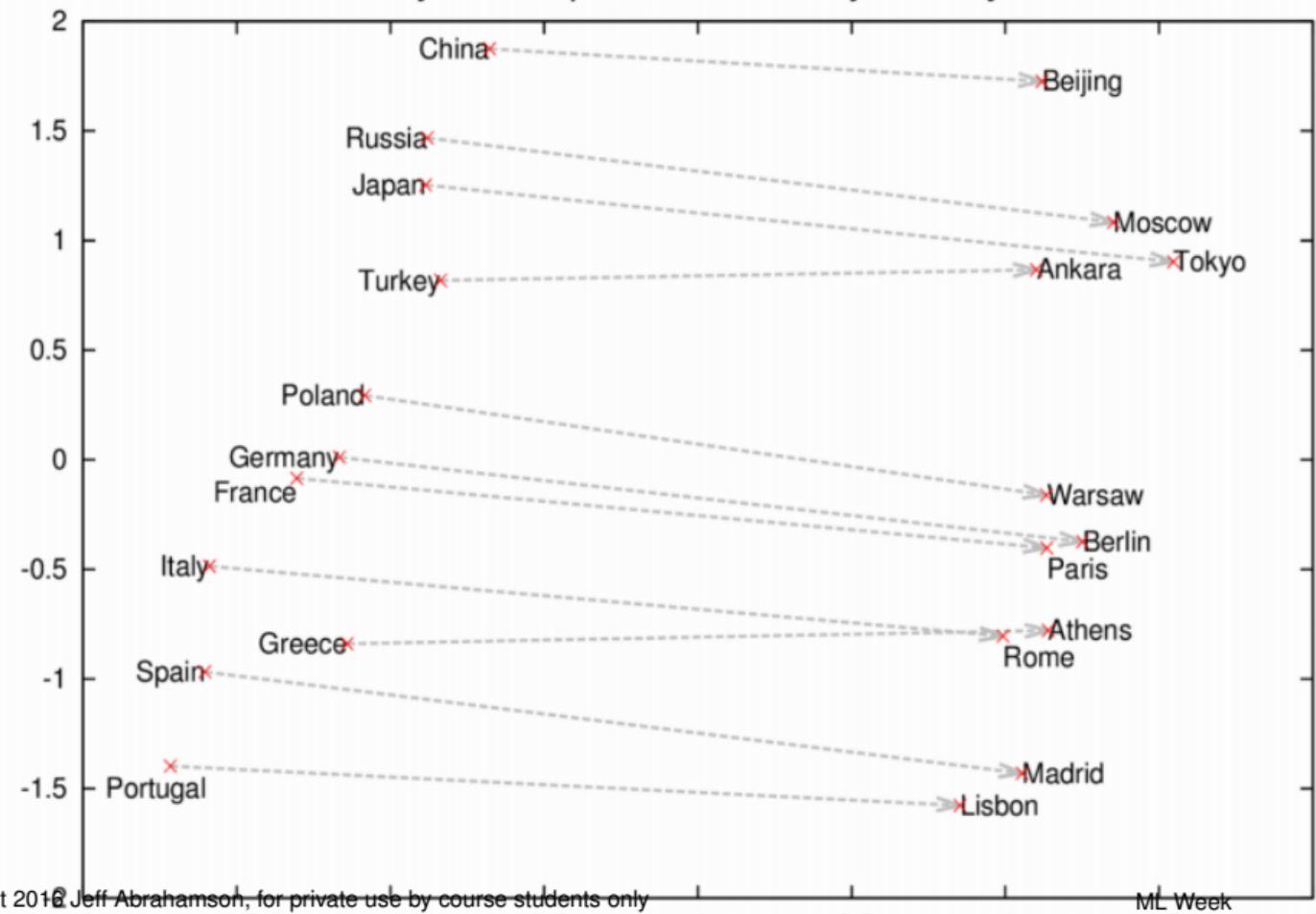
-1	0	+1
-2	0	+2
-1	0	+1



-1	-2	-1
0	0	0
+1	+2	+1



Country and Capital Vectors Projected by PCA



	Term	Similarity
	"shift"	0.933104
	"gown"	0.887743
	"skirt"	0.881672
	"bandage"	0.880162
	"midi"	0.869786



Eddie Bell @ Lyst



a group of young girls standing next
to each other on the beach



A clock tower with a clock on top of it

Google?

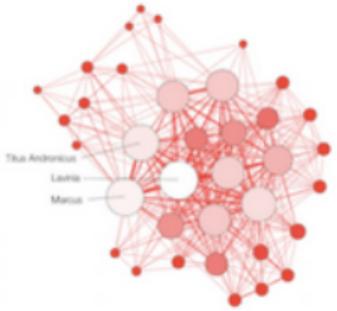


A bunch of bananas hanging from a tree

Google?

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TITUS ANDRONICUS
Number of **36** | 50% Network density



ROMEO AND JULIET
Number of **41** | 37% Network density



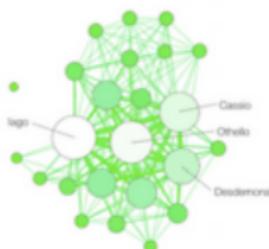
JULIUS CAESAR
Number of **46** | 34% Network density



HAMLET
Number of **37** | 39% Network density

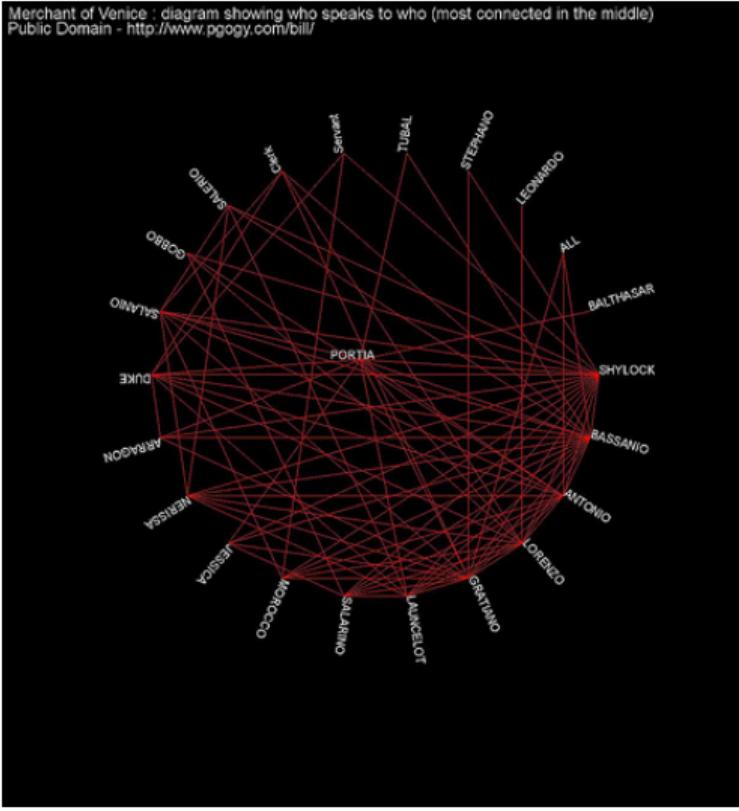


TROILUS AND CRESSIDA
Number of **35** | 40% Network density



OTHELLO
Number of **24** | 55% Network density

Merchant of Venice : diagram showing who speaks to who (most connected in the middle)
Public Domain - <http://www.pgogy.com/bill/>



Friar Laurence: *No leisure required.*
 Friar: And I am nothing else to start his horse.
 Friar Laurence: *Unknown is the course, I like it not.*

And therefore have I little talked of love.

Friar Laurence: *Look, sir, here comes the lady towards my cell.*

Friar: *Pardon me, my lady and my wife.*
How now, my love, where comest thou?
 Friar: *From my round bower, where I did thee see.*
What courteous master!
 Friar Laurence: *That's a curious bairn.*

Friar Laurence: *Come to make confession to the father.*
To a priest that's wholly unblameable,
 Friar: *Be not sorry to hear that you have me.*
And confesse to you your thoughts,
 Friar: *For all I have seen, that you have hit.*
Being square behind your back, stand to your fate.
 Friar: *For such thy face is much about with me.*
The tears have got small victory by that,
 Friar: *How angry is man that wears all that green.*
And what I say, I say it to thy face,
 Friar: *Thou bairn art come, and thou hast deserved it.*
Or shall I come to you at evening mass.
 Friar Laurence: *My leisure serves me, gentle daughter, now.*
 Friar: *Juliet, on Thursday early will I rouse ye.*
Put hope, putchee, puthelp,
 Friar Laurence: *I hear thou must, and nothing may prorogue it.*

Tell me not, friar, that thou hear'st of this.

Friar Laurence: *Thou hast the strength of will to slay thyself.*

My dreams presage some joyful news at hand.

Reverent: *Her body sleeps in Capels' monument.*

I will hence to-night.
I do beseech you, sir, have patience.
Tush, thou art deceived.

No import he.

get thee gone.

Who calls me here?

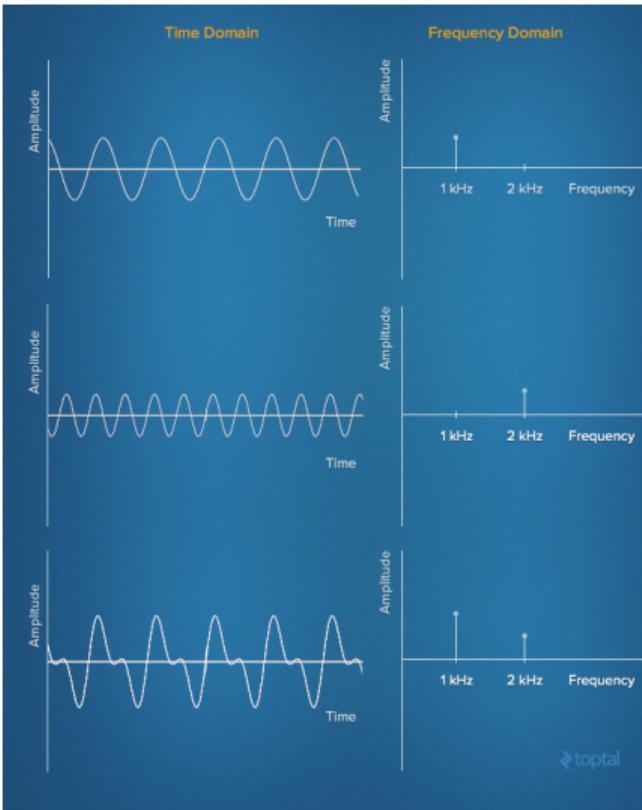
That the life-weary taker may fall dead.

But Mardon's here.

famine is in thy cheeks.

No answer but can not be given.
Thy presence, mardon my self,
 Friar: *Put this in any liquid thing you will.*

There is thy gold, worse poison to men's souls.



<http://www.toptal.com/algorithms/>

shazam-it-music-processing-fingerprinting-and-recognition

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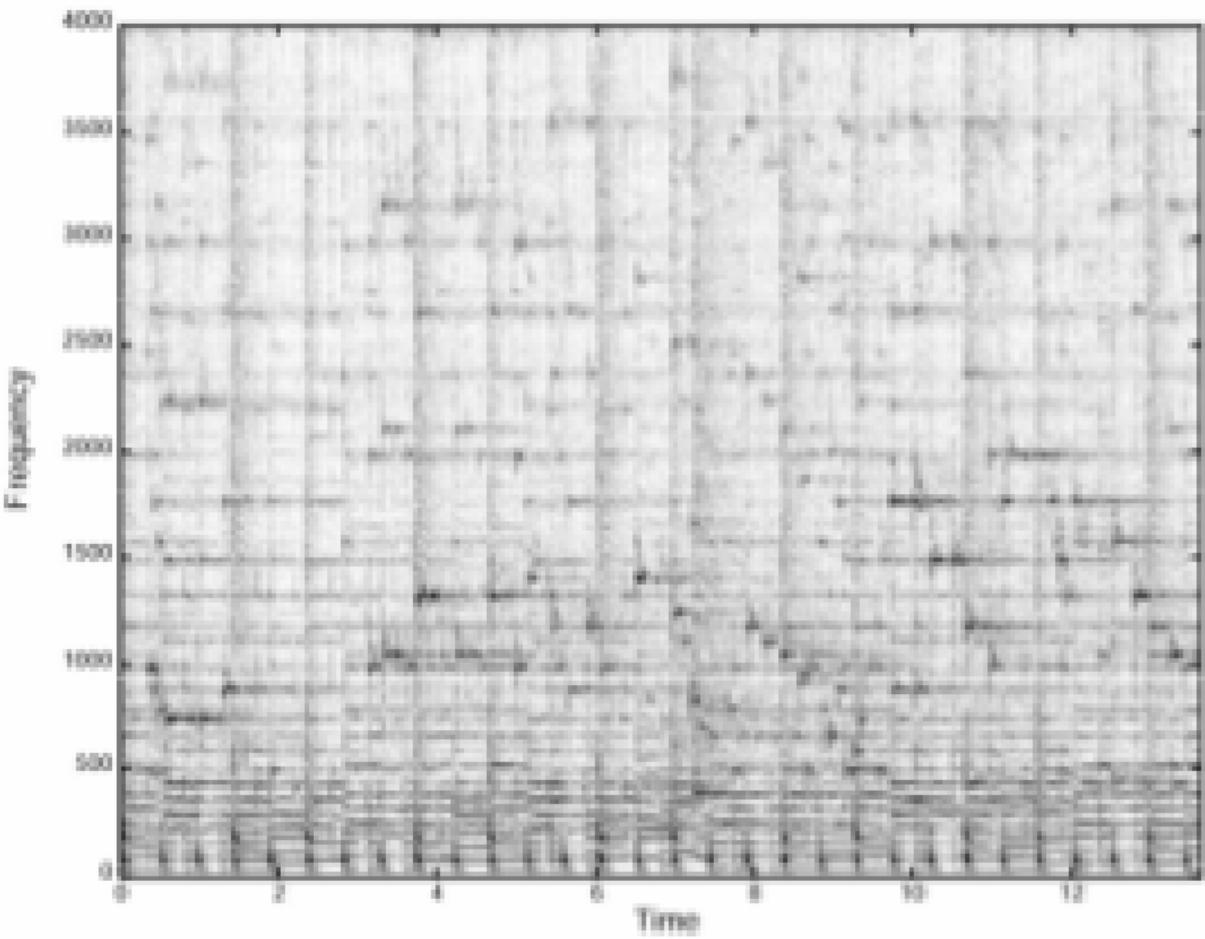


Fig 14 Spectrogram

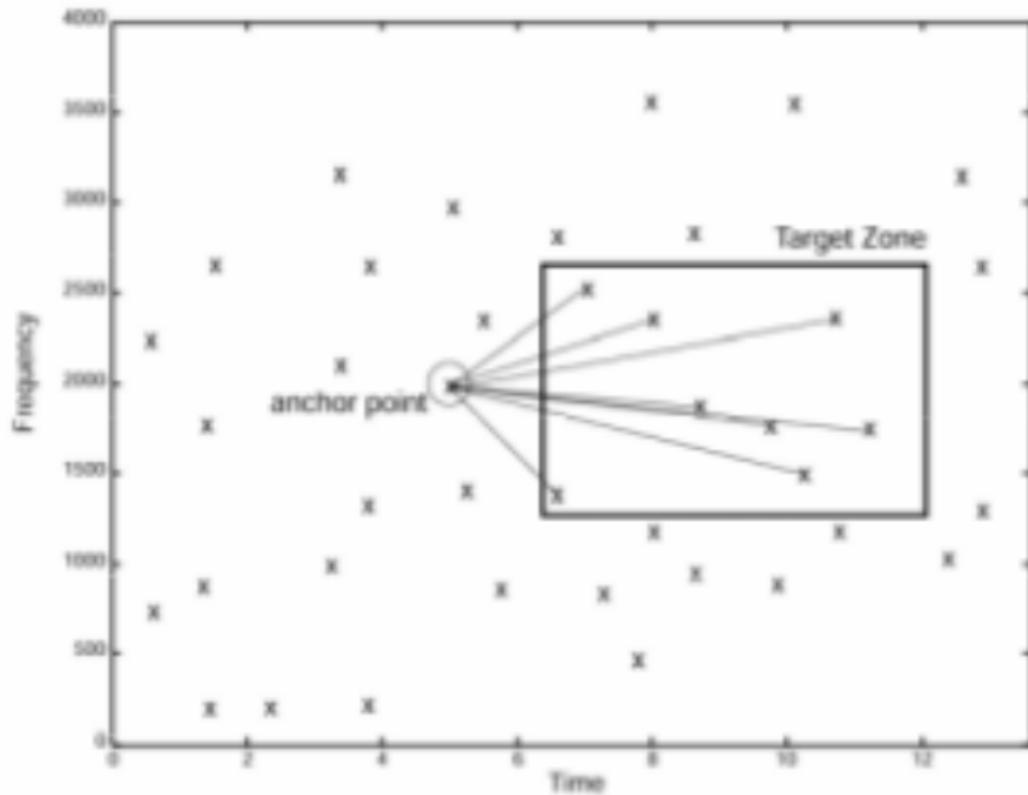


Fig. 1C - Combinatorial Hash Generation



Big data?

*[http://aadrake.com/
command-line-tools-can-be-235x-faster-than-your-hadoop-cluster.html](http://aadrake.com/command-line-tools-can-be-235x-faster-than-your-hadoop-cluster.html)*

Un peu de maths...

- 100 critères
- int (*4 octets par critère*)
- 16 GB RAM
- $O(n \log n)$ en mémoire

$$400N + 400N \log(400N) < \frac{16 \cdot 10^9}{400}$$

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$$N \approx 2 \cdot 10^6$$

Questions?

ml-week.com/1