

ML Week

Images

Jeff Abrahamson

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Signal processing

in 2 or 3 dimensions

Images

Details that can matter:

- Illumination
- White balance
- Resolution
- Camera settings (e.g., depth of field)
- Sensor noise
- Compression technology

Images

Challenges:

- Segmentation
- Area of interest detection
- Perspective shifting

Images

Applications:

- Agriculture: fruit ripening, automated harvesting
- Security: detecting specific people
- Security: detecting accidents (e.g., falls)
- Art: counterfeit detection
- Medicine: assisted surgery
- Image search

Images

Image search (at first):

- Texture
- Colour
- Shape, simple objects



Eddie Bell @ Lyst



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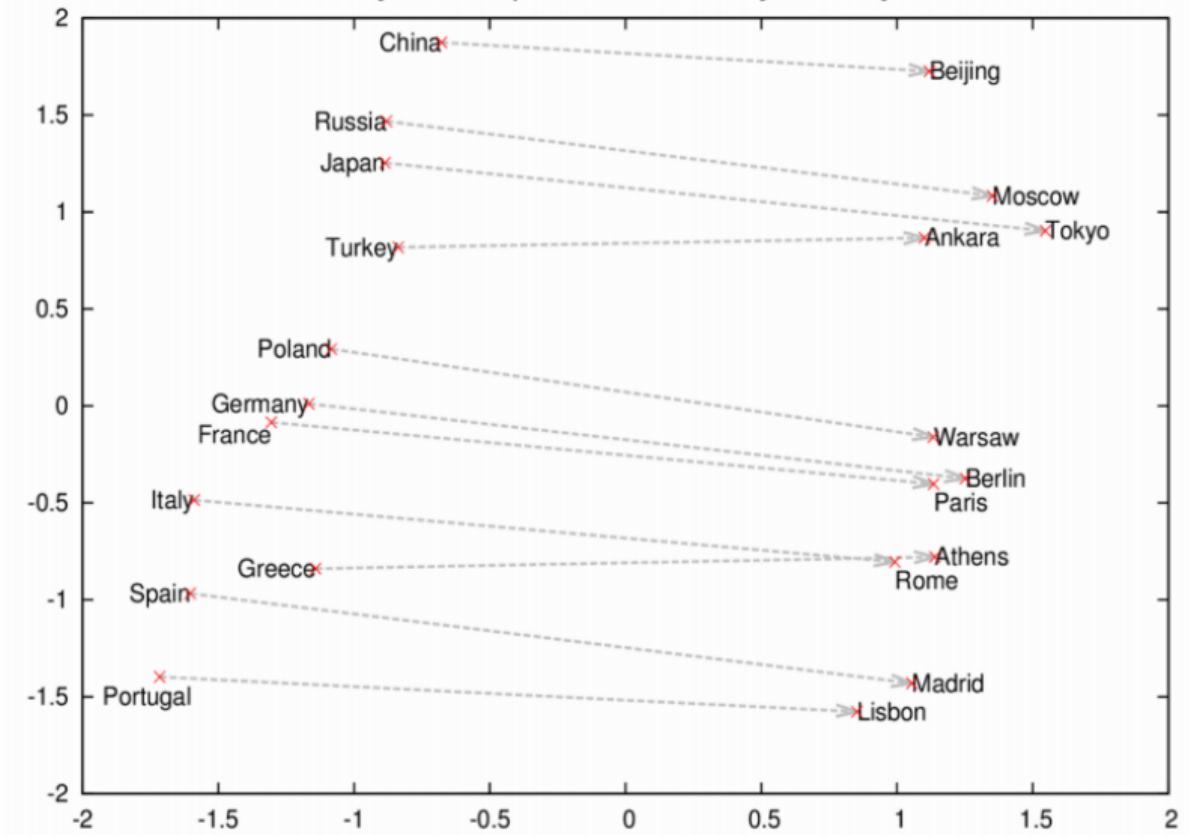
-1	0	+1
-2	0	+2
-1	0	+1



-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

Similar to 'dress'



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



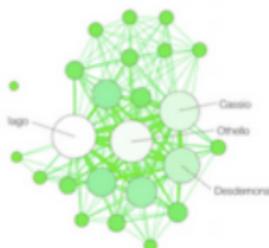
JULIUS CAESAR
Number of **46** | 34% Network density



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

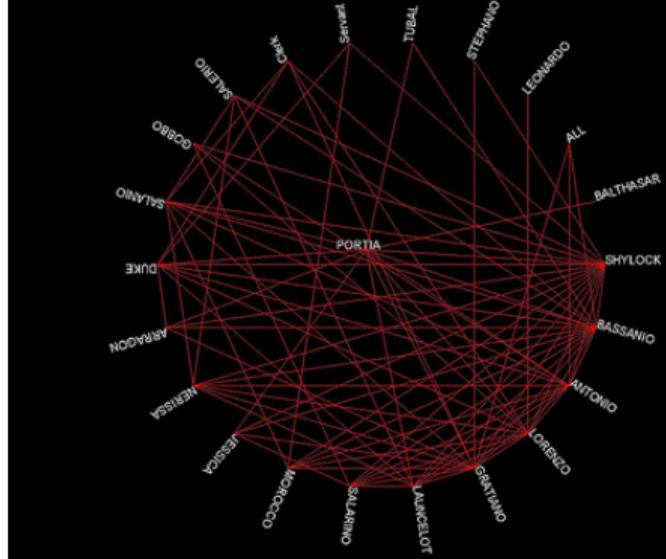


TROILUS AND CRESSIDA
Number of **35** | 40% Network density



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.*
What sayst thou, when may we make a match?
 Friar: *From now to morrow, from noon till night.*
What course shallst thou take?
 Friar: *That's a secret, too.*

Friar Laurence: *Come to make confession to the father.*
To whom shall I speak? who is your father?
 Friar: *By no means to her that you have none.*
And confesse to you that she none.
 Friar: *For all I know, that you have none.*
Being square behind your back, stand to your fate.
 Friar: *For such thy back is crooked should not man.*
The tears have got small victory by that.
 Friar: *How angry is man that bears all that upon him.*
And what I say, I say it to thy face.
 Friar: *Thy face is angry, 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, put love, put help.

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 bid.

get thee gone.

Who calls me bid.

That the life-weary taker may fall dead.

But Mardon's here.

famine is in thy cheeks.

No answer bid me bid no more.
Thy presence, wretched thy self.

Put this in any liquid thing you will.

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

Questions?

purple.com/talk-feedback