COGNITIVE BUILDER COURSE

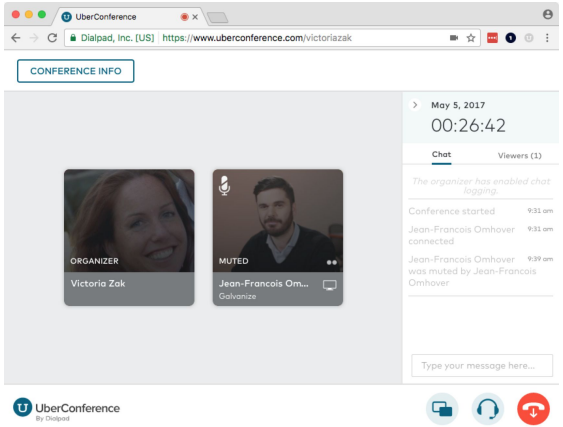
ALPHA

WEEK 1 - Virtual Meeting 2

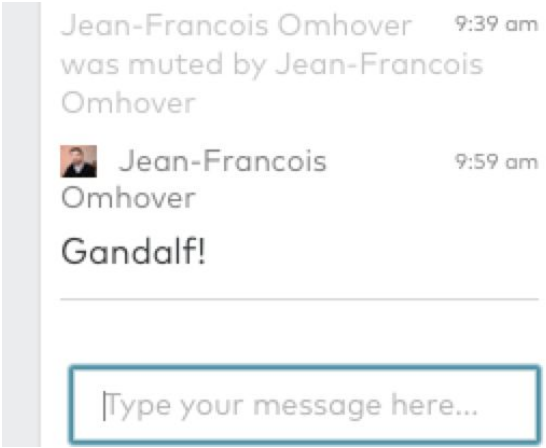
Review, Questions & Answers

galvanize

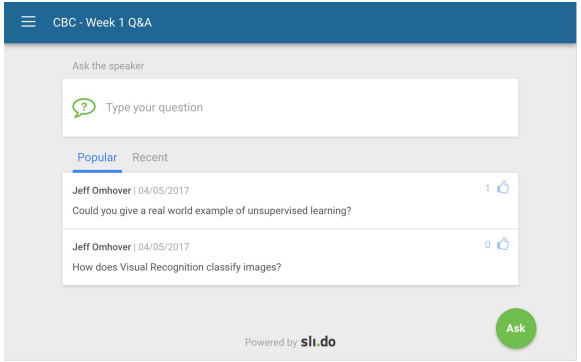
HOW WE WILL WORK



Live stream
Uberconference



Live answer (polls)
Uberconference chat



Submit Questions
Upvote other's questions
sli.do

UNITS OF THE WEEK
FOCUS OF TODAY'S MEETING

Course Units

Unit 1
Introduction to Week 1

Unit 2
Cognitive Technologies

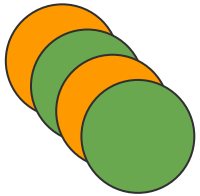
Unit 3
Hello Cognitive World

Unit 4
Visual Recognition

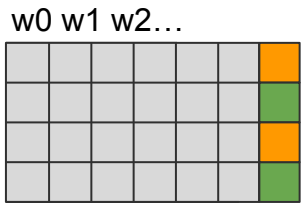
But you can still ASK ANYTHING! (please)

TONE ANALYZER
HOW?

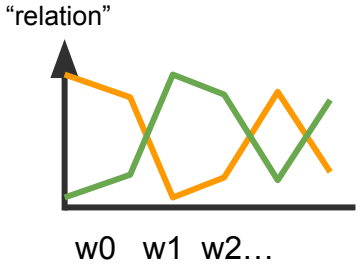
raw text
+labels



bags of words
+labels



vectors
+labels



model

Name Dropping

Tokenization
Lemmatization
Stemming
N-grams
Part-of-Speech tagging

TF-IDF
Word2Vec

NaiveBayes (historic)

ConvNets

TONE ANALYZER (APPLICATIONS)

Marketing

analysing tweets, blogs about a brand

Customer Service

analyzing interactions with agents

Product Design*

analyzing perception of multiple products

...

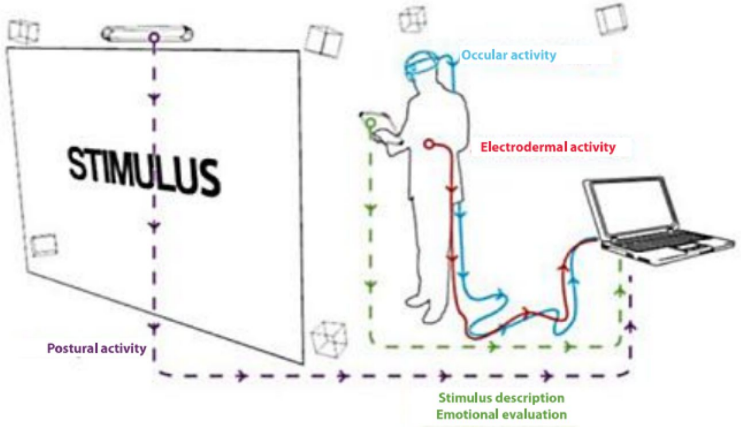


Figure V. Rieuf, PhD, 2013

Demos:

https://tone-analyzer-demo.mybluemix.net

https://customer-engagement-demo.mybluemix.net

VISUAL RECOGNITION
HOW?

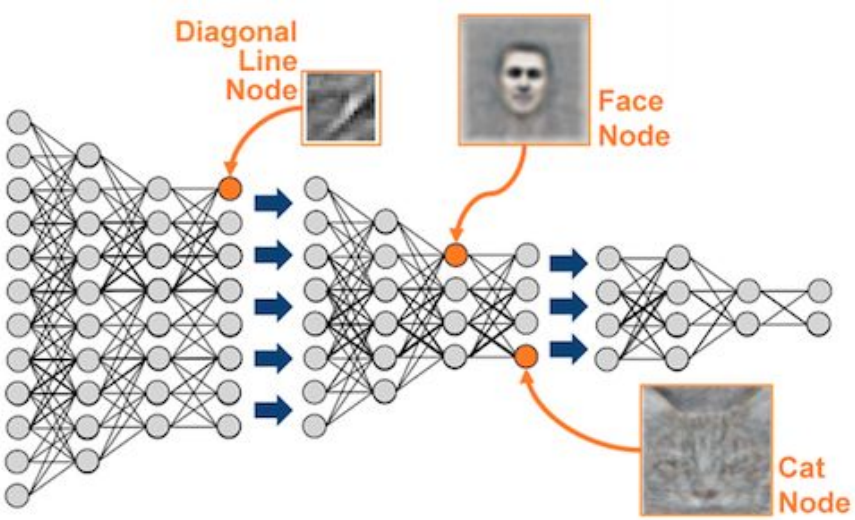
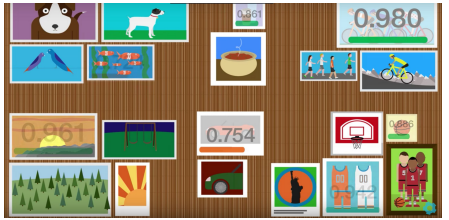


figure kdnuggets link

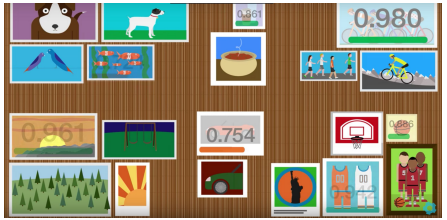


“Visual Recognition” can detect objects in images

Name Dropping:
Back propagation
Gradient descent

VISUAL RECOGNITION CLASSIFICATION APPS

Finding Waldo
Types of birds, Dog breeds
Cartoon Characters
Clothes
Musical Instruments
A needle in a haystack
Trash
Satellite Imagery, Visual patterns
Blondes and Brunettes
Security camera / recognize ID
Type of airplane
Medical Diagnosis, Detect fractures in X rays.



“Visual Recognition” can detect objects in images

Demos:
https://visual-recognition-demo.mybluemix.net

VISUAL RECOGNITION SEARCH BY SIMILARITY

Generic Image Features (kind of)

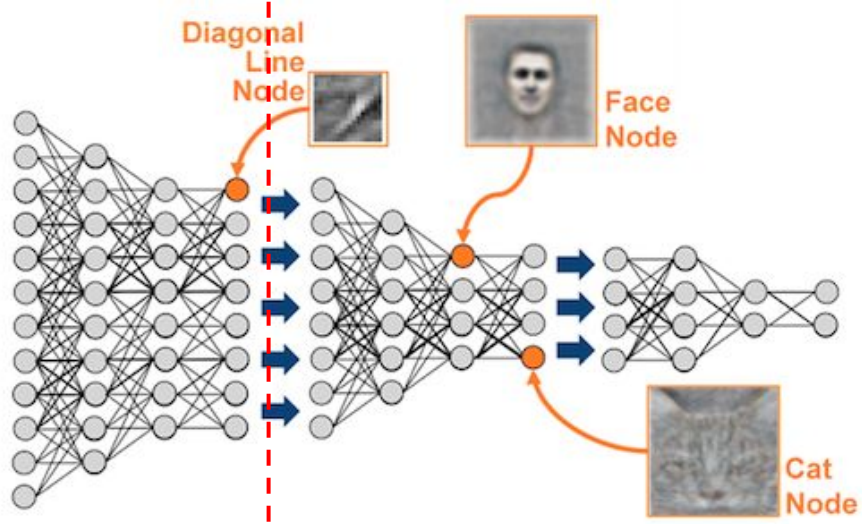
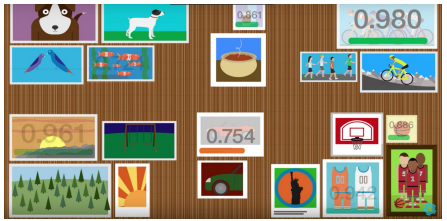


figure kdnuggets link



“Visual Recognition” can detect objects in images

Demos:
https://similarity-search-demo.mybluemix.net

ACCURACY ?

image_id	actual	predicted
1	dog	dog
2	dog	cat
3	cat	cat
4	cat	dog
5	dog	dog
6	cat	cat
7	dog	dog
8	dog	dog
9	dog	cat
19	cat	cat

"CONFUSION MATRIX"

	Pred Dog	Pred Cat
Actual Dog	4	2
Actual Cat	1	3

https://en.wikipedia.org/wiki/Confusion_matrix

ACCURACY ?

"CONFUSION MATRIX"

	Pred +	Pred -	
Actual +	4 TP	2 FN	P
Actual -	1 FP	3 TN	N
	P*	N*	

https://en.wikipedia.org/wiki/False_positives_and_false_negatives

ACCURACY ?

Analogy with a search engine...

Recall: on all the relevant documents, how many do I recall in my results?

Precision: on all the ones that I provide as result, how many are really relevant?

For classification...

Recall: on all the +, how many do I predict +

Precision: considering those that I classify as +, how many are actually +

"CONFUSION MATRIX"

	Pred +	Pred -	
Actual +	4 TP	2 FN	P
Actual -	1 FP	3 TN	N
	P*	N*	

https://en.wikipedia.org/wiki/Precision_and_recall

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