

COGNITIVE BUILDER COURSE



Introduction to Watson using Python SDK

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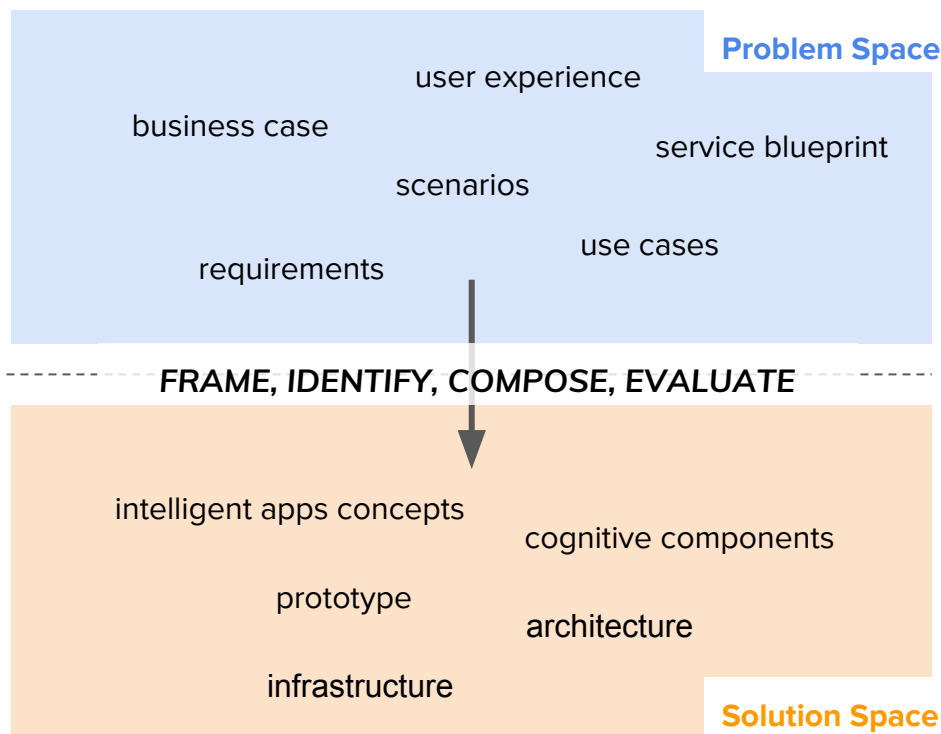
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COGNITIVE BUILDER COURSE

GENERAL OBJECTIVE



Designing Data/Cognitive Products

A graduate from this program would be able to:

- Frame a business problem
- Identify ML/AI solutions
- Compose, integrate and deploy
- Evaluate feasibility

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Introduction to Watson using the Python DSK

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OBJECTIVES

- Name and relate the different families of cognitive technologies
- Give examples of applications for sentiment analysis
- Implement sentiment analysis using Watson ToneAnaylser

COGNITIVE BUILDER COURSE

1. “Cognitive Technology 101”

2. Emotion Analysis /
ToneAnalyzer

3. Practice!!!

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using the Python DSK**

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COGNITIVE WHAT?

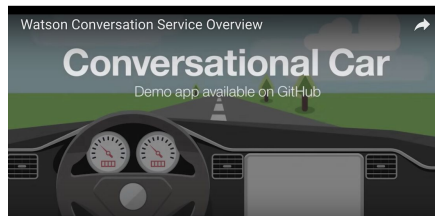
Watson

Platform for building
data-based products

Machine Learning
& Artificial Intelligence components (Watson)

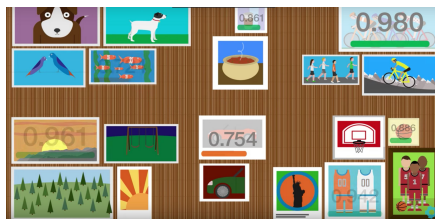
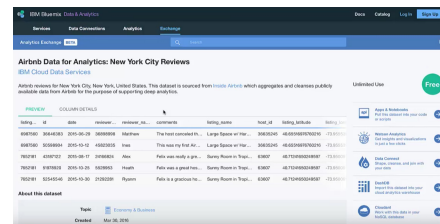
Cloud, data storage, data streaming and
processing
Internet of Things

...



“Conversation”
can make a
product talk

“Discovery”
can help you mine
insight in (any) data



“Visual Recognition”
can detect objects
in images



WHY “COGNITIVE” ?

=> Machine Learning

“Field of study
that gives computers
the ability to learn
without being
explicitly programmed.”

Arthur Samuel, 1959



HOW DOES A MACHINE LEARN ?

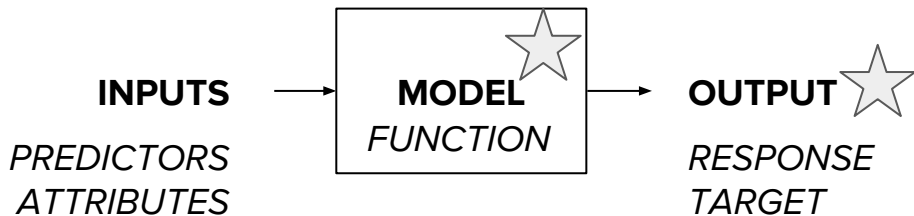
How do YOU learn ?



HOW DOES A MACHINE LEARN ?

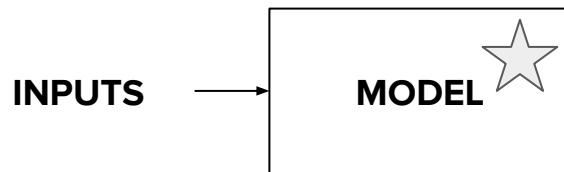
SUPERVISED LEARNING

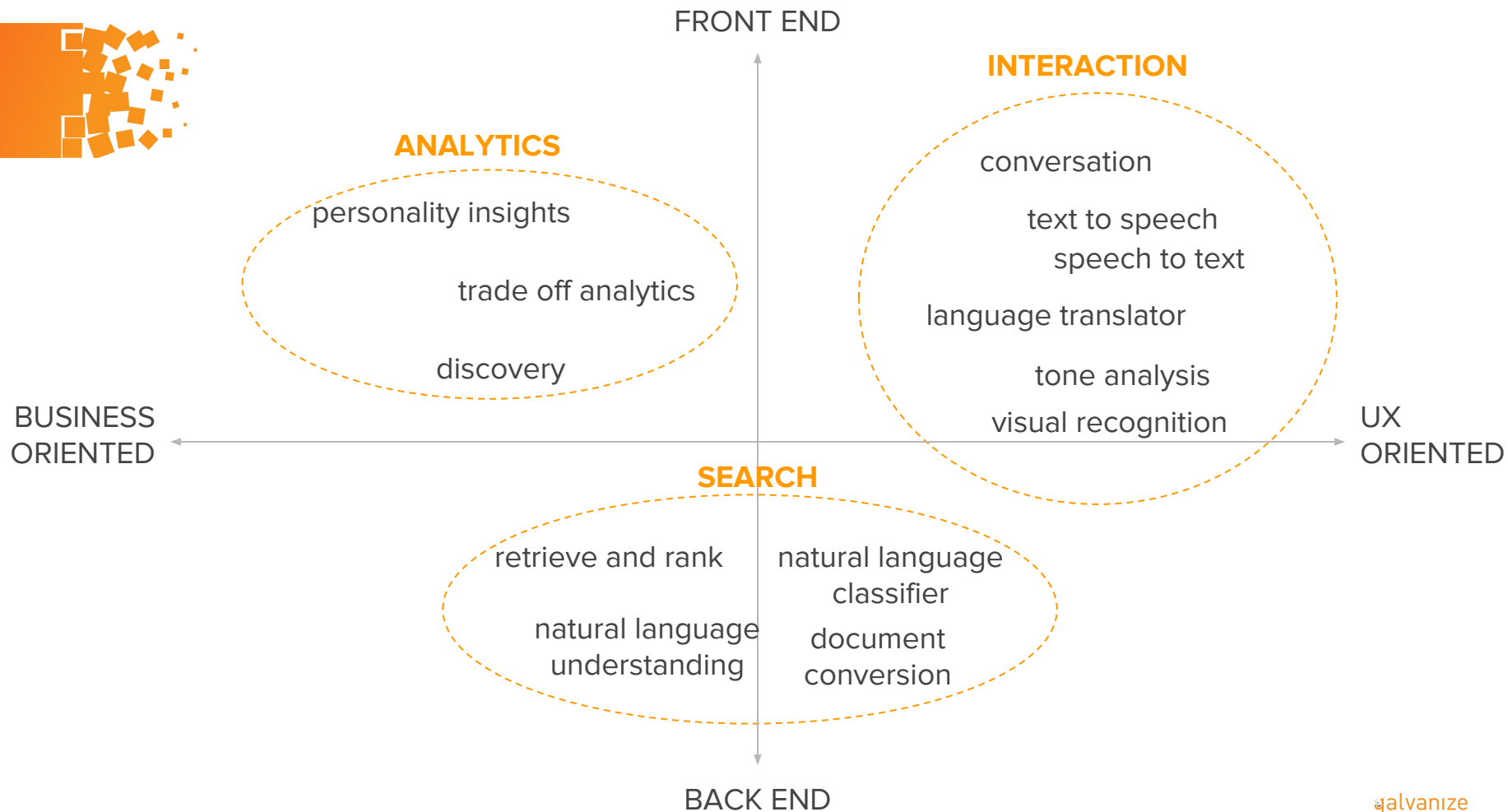
Example: based on what we see on the market,
how to estimate the price of an apartment
depending on the number of rooms, surface,
location, amenities?



UNSUPERVISED LEARNING

Example: what are things people talk about related
to a given brand?
within blog posts, tweets, etc.





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WHY DO WE CARE ?

**When did you use/have/feel
emotions this morning?**



TONE ANALYZER FUNCTION

```
2. cbc (docker)
~$ source activate cbc
(cbc) ~$ cd work
(cbc) ~/work$ cd HelloCognitiveWorld
(cbc) ~/work/HelloCognitiveWorld$ cd code
(cbc) ~/work/HelloCognitiveWorld/code$ python toneanalyzer-solution.py
ToneAnalyzer> At first I was afraid, I was petrified, kept thinking I could never live without you by my side.
Anger, 0.03
Disgust, 0.08
Fear, 0.88
Joy, 0.01
Sadness, 0.07
ToneAnalyzer> |
```

Input

Text

Output

Emotion tones: anger, disgust, fear, joy, sadness

Language tones: analytical, confident, tentative

Social tones: openness, conscientiousness, extraversion, agreeableness, emotional range



TONE ANALYZER APPLICATIONS

Marketing

analysing tweets, blogs about a brand

Customer Service

analyzing interactions with agents

Product Design*

analyzing perception of multiple products

...

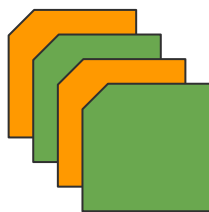
Demos:

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

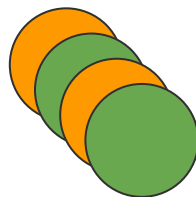
<https://customer-engagement-demo.mybluemix.net>



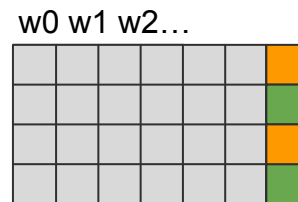
SENTIMENT ANALYSIS PIPELINE



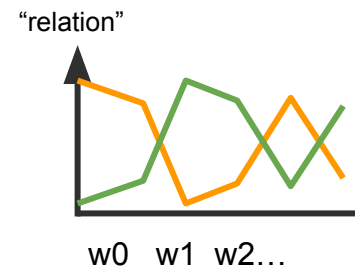
raw text
+labels



bags of words
+labels



vectors
+labels



model

"Name Dropping"

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

TF-IDF
Word2Vec

NaiveBayes (historic)
ConvNets

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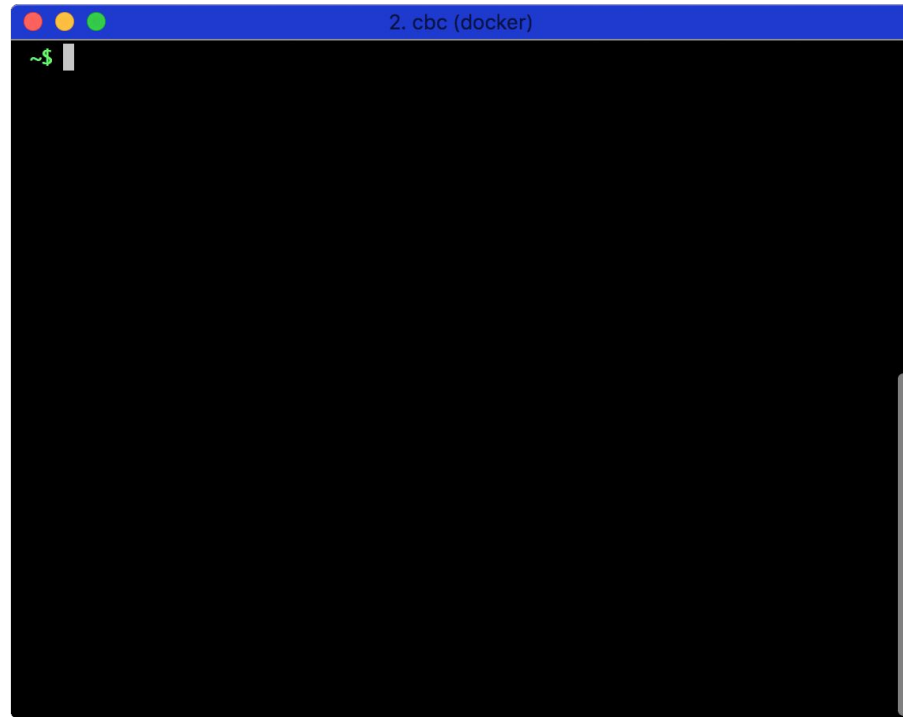
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github.com/CognitiveBuilder/HelloCognitiveWorld



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