

**AI - ML AND THE CLOUD.**



# ARTIFICIAL INTELLIGENCE



# MACHINE LEARNING

# LET'S BEGIN WITH A STORY

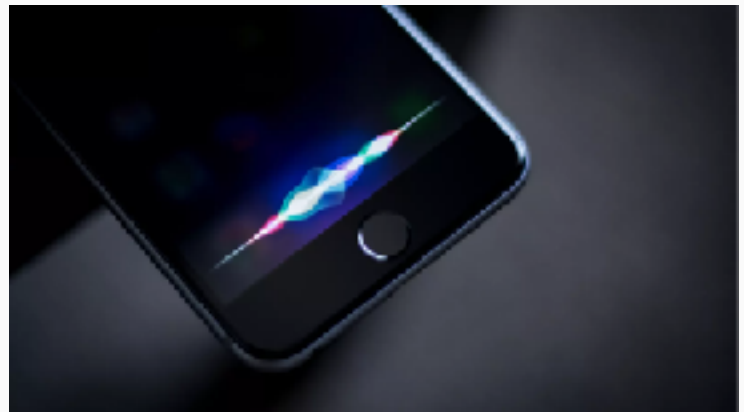


**TEMPORALLY RECURRENT  
OPTIMAL LEARNING**

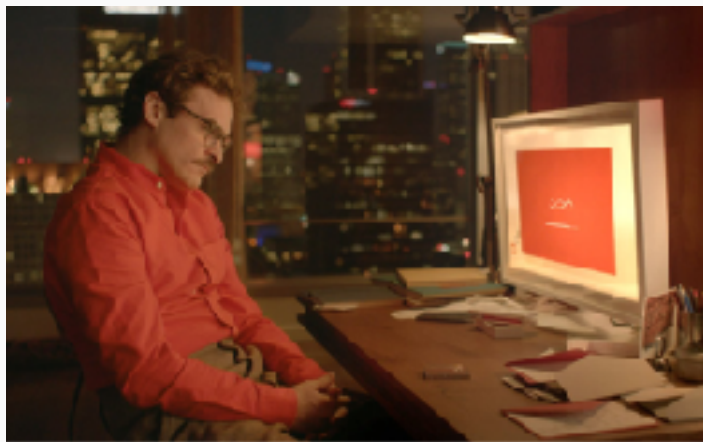
# ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING



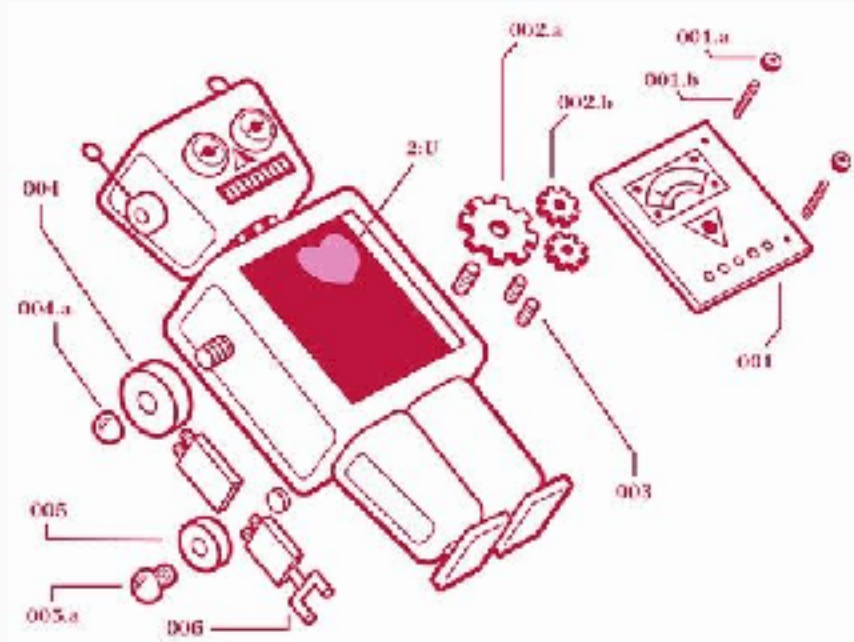
# WEAK OR NARROW AI



# STRONG OR GENERAL AI



# THE ANATOMY OF AI



# PERCEPTION





# NATURAL LANGUAGE PROCESSING

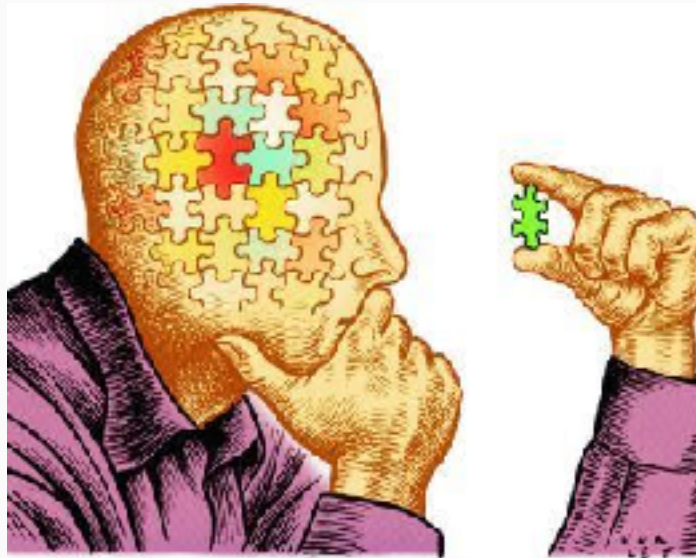
I feel like eating Japanese  
in a traditional restaurant  
at 7 p.m. in any city



FIND A RESTAURANT



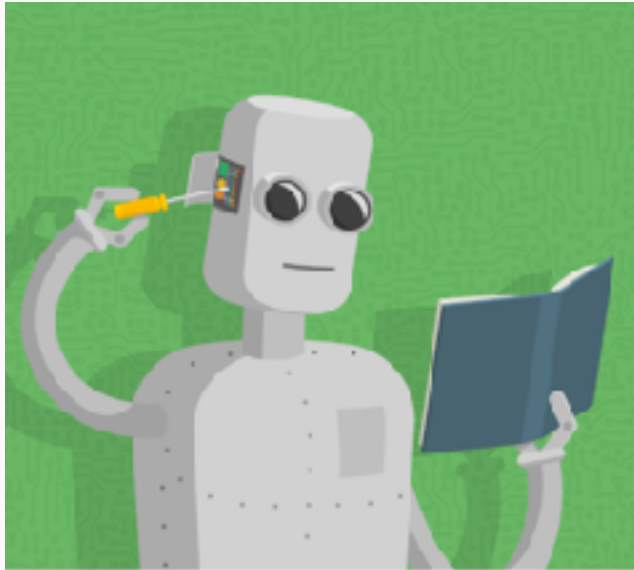
# REASONING



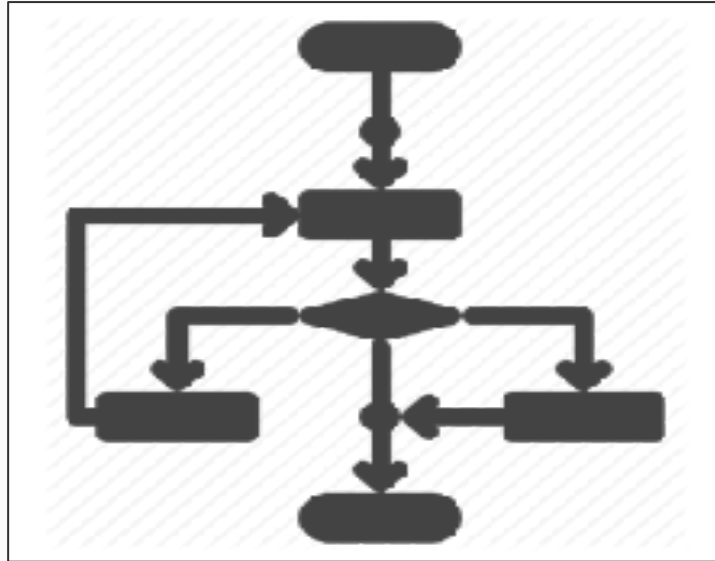
# NAVIGATION



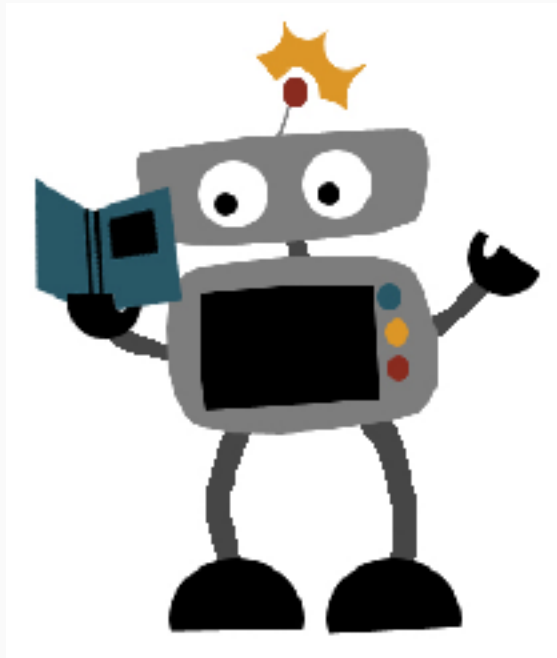
# MACHINE LEARNING



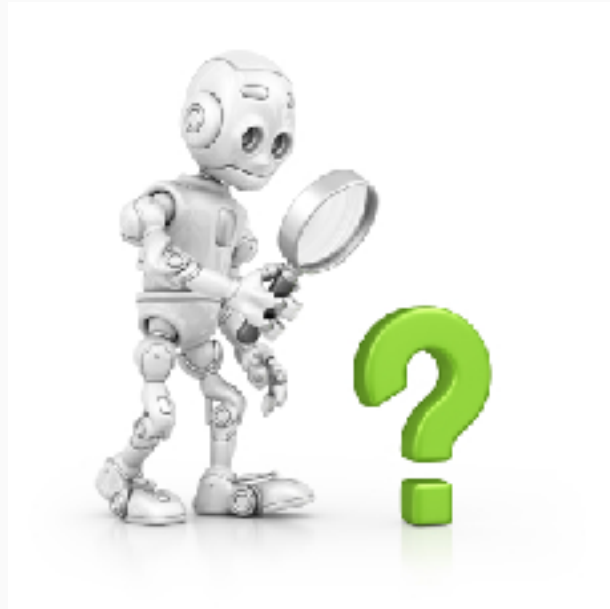
# ALGORITHMS



# SUPERVISED LEARNING

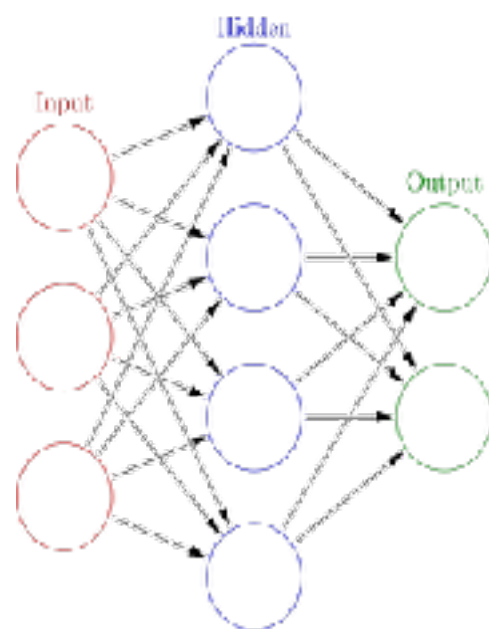


# UNSUPERVISED LEARNING





# NEURAL NETWORKS



INPUT		OUTPUT
A	B	A AND B
0	0	0
0	1	0
1	0	0
1	1	1

$$\Theta^{(1)} = \begin{bmatrix} -30 & 20 & 20 \end{bmatrix}$$

$$h_{\Theta}(x) = g(-30 + 20x_1 + 20x_2)$$

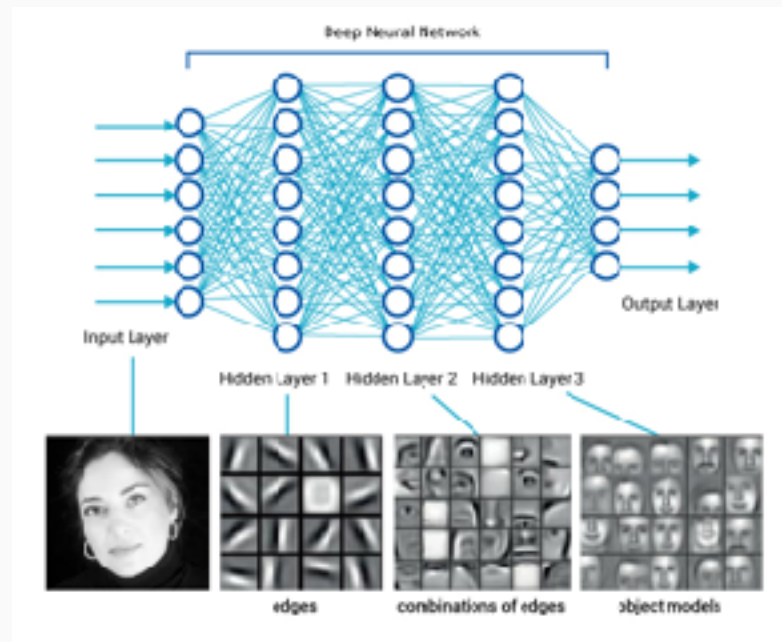
$x_1 = 0$  and  $x_2 = 0$  then  $g(-30) \approx 0$

$x_1 = 0$  and  $x_2 = 1$  then  $g(-10) \approx 0$

$x_1 = 1$  and  $x_2 = 0$  then  $g(-10) \approx 0$

$x_1 = 1$  and  $x_2 = 1$  then  $g(10) \approx 1$

# DEEP LEARNING



**DATA IS THE NEW FUEL**






WATCH UP

# Shortage of data causing Samsung troubles in launching Bixby Voice for the U.S.

BY ANDREW VARGAS | WASHINGTON, JUL. 30, 2017 AT 1:41 PM EDT

 22 Comments

**“THE DELAY COMES FROM A HANDFUL OF ISSUES WITH THE SERVICE BUT IS DRIVEN BY A LACK OF USAGE DATA THAT'S ULTIMATELY REQUIRED FOR THE MACHINE LEARNING SYSTEMS TO WORK AT THEIR FULL POTENTIAL”**

WHAT SEPARATES A **SUCCESSFUL** APPLIED  
MACHINE LEARNING COMPANY IS OFTEN THE  
**NOVELTY, QUALITY AND/OR QUANTITY** OF  
THE DATA THEY HAVE ACCESS TO.

# ¿WHAT ARE BIG COMPANIES USING ML & DATA FOR?



# ¿WHAT ARE STARTUP DOING WITH AI?

## Hi, I'm Amy

Your AI powered personal assistant for scheduling meetings. You interact with me as you would to any other person - and I'll do all the tedious email ping pong that comes along with scheduling a meeting.

No sign-in, no password, no download, all you do is:

Cc: [amy@x.ai](mailto:amy@x.ai)





**SOMEONE ELSE ALREADY HAVE THIS DATA?**

**WOULD IT BE EASY TO REPLICATE THIS  
DATASET?**

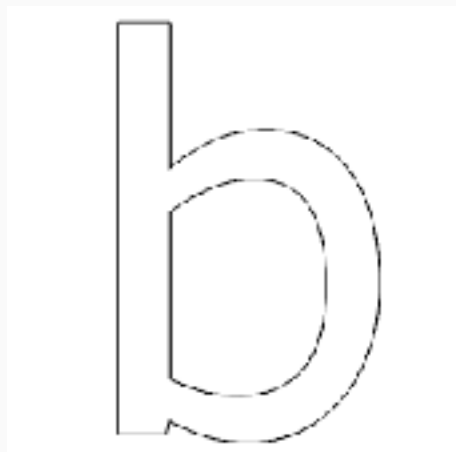
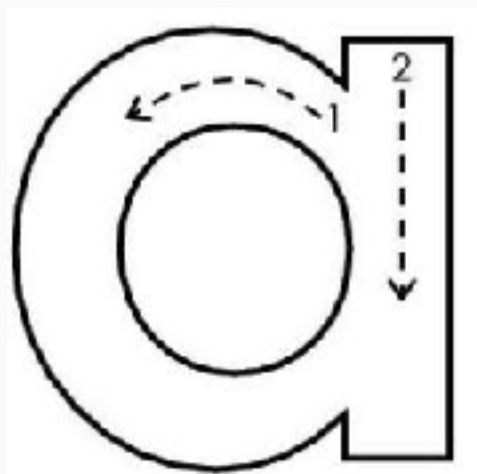
**THE CLOUD**

# REMEMBERING THE CONCEPT





**WHAT DOES THIS HAVE TO  
DO WITH CLOUD?**

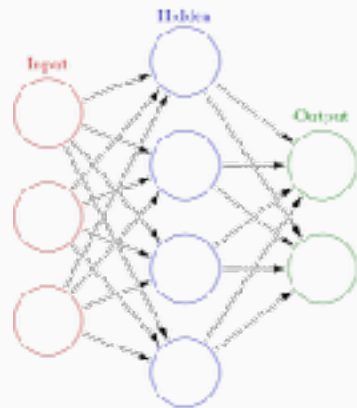


# MNIST DATASET



- 60,000 IMAGES
- HANDWRITTEN
- 28 X 28 PIXELS
- 784 VALUES MATRIX

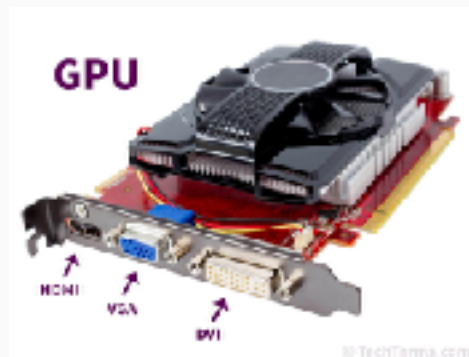
1943



1969



2006



2012





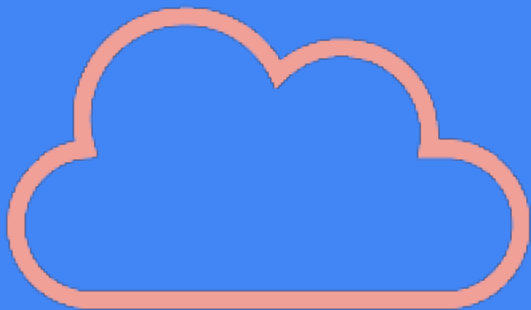


# MACHINE LEARNING AS A SERVICE

The screenshot displays the Microsoft Azure Machine Learning Studio interface. The main workspace shows a workflow titled "MNIST regression: logistica multinomial" with a status of "Trained: training". The workflow consists of several steps: "Import Dataset", "Split Data", "Train Model", "Evaluate Model", and "Export Model". A "Mini Map" view is visible in the bottom left corner. The right sidebar shows "Experiment Properties" with details like "EXPERIMENT ID", "EXPERIMENT NAME", and "EXPERIMENT DESCRIPTION".

The screenshot shows the Amazon Machine Learning console. The breadcrumb navigation indicates the path: "Amazon Machine Learning" > "ML models" > "Create ML model". The "Input data" step is selected, showing options to "Locate the data you want to use to train your ML model". The interface includes a search bar for "Select the Amazon S3 bucket ID" and a table with columns "Name", "Status", "Location", and "Creation time". The "Create" button is highlighted.

**THE CLOUD IS MAKING LIFE EASIER FOR ML, NOW WE SHOULD  
WORK HARD IN UNDERSTANDING WHAT IS HAPPENING BEHIND WHEN  
WE USE THESE TOOLS AND STOP USING THEM AS A “BLACK BOX”. ONLY  
THIS WAY WE WILL BE ABLE TO EXPLODE THE REAL POTENTIAL OF THE  
SAME AND CALL OURSELVES REAL DATA SCIENTISTS OR MACHINE  
LEARNING ENGINEERS.**



**IMAGINE A SHOE**

# HOW IS THE SHOE IN YOUR MIND?



## **Seat belts are less safe for women**

A lot less safe.

**ACCESSORIES & PERIPHERALS**

### **It's Not You, It's It: Voice Recognition Doesn't Recognize Women**

By Graeme McMillan @graemem | June 01, 2011

**THE END**

**@HAYDEMTZL**

