



अतः श्री मशीन लर्निंग कथा ।

Pratik Parmar

Twitter: @hackyroot

Microsoft Student Partner

Tech Speaker at GDG and Mozilla



meetup.com/gdgbardia

Session Outline

1

What is Machine Learning (ML)?

How is ML different from traditional programming?

2

What is the difference between ML, DL, and AI?

The history of Artificial Intelligence

Career in ML

3

Under the hood:
ML with Pizza

4

ML Frameworks

Introduction to Machine Learning APIs

Sources to learn ML

A black and white profile photograph of Elon Musk. He is facing left, looking thoughtfully off-camera. He has dark hair and a beard. He is wearing a dark suit jacket over a white collared shirt. The background is dark and out of focus.

*I think we should be very
careful about artificial
intelligence. If I had to guess
at what our biggest existential
threat is, it's probably that.*

- Elon Musk, CEO of SpaceX

Access this presentation with GIFs:

<https://bit.ly/2S9uWqg>

**AUTO-CORRECT HAS TROUBLE
WITH THE WORD "ISN'T"**

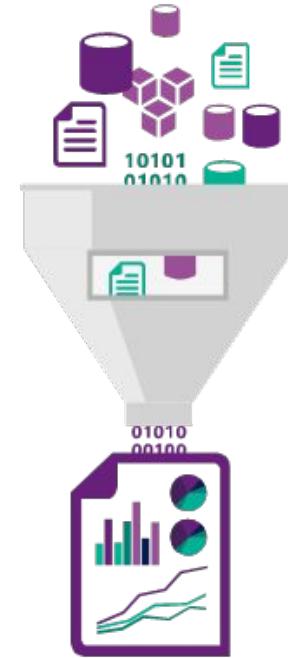


**TELL ME AGAIN HOW THE MACHINES
WILL ONE DAY TAKE OVER**

**Have you ever wanted to
predict the future?**



Machine Learning uses historical data to make predictions



Inflated Expectations

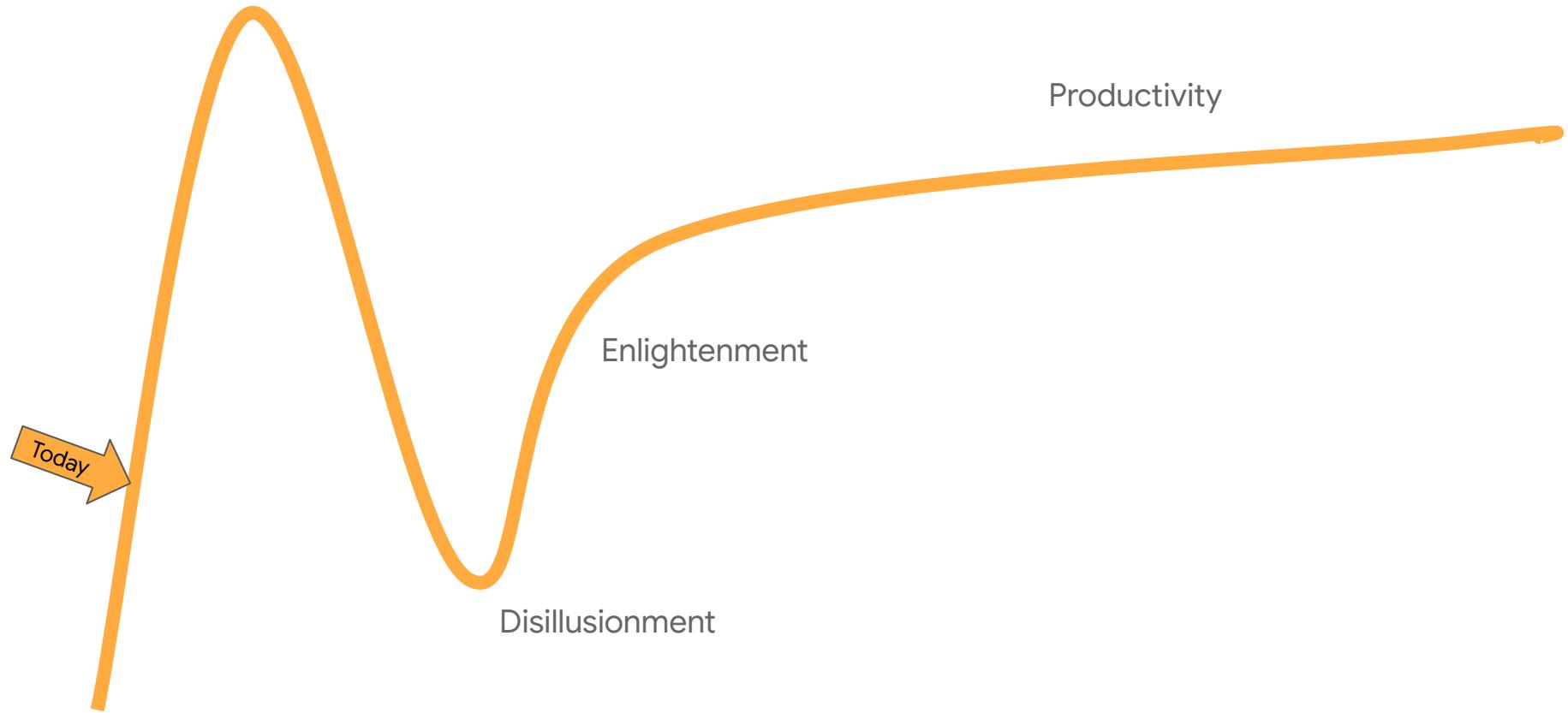
Productivity

Enlightenment

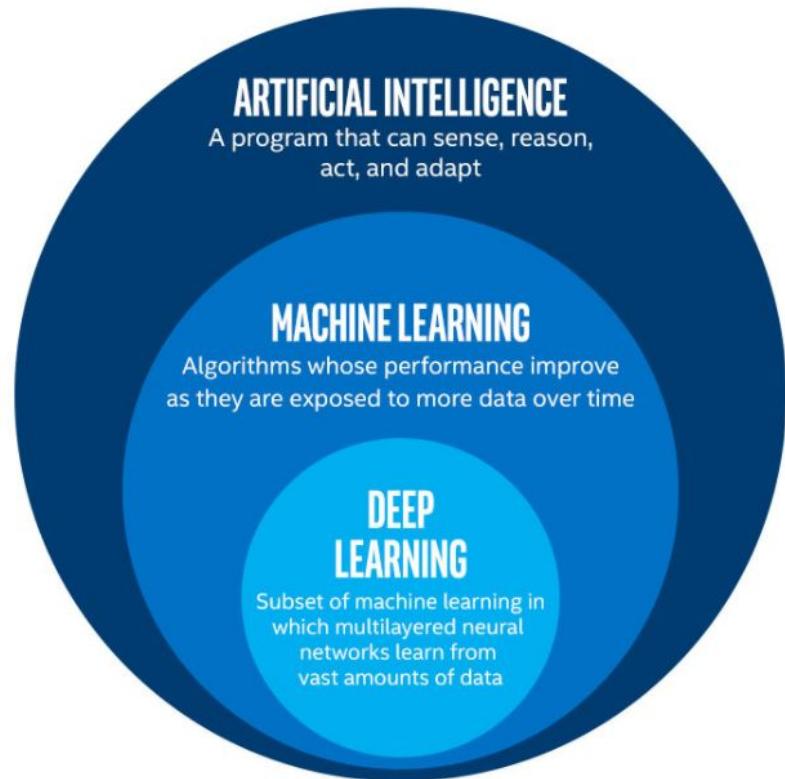
Disillusionment

Today

Technology Trigger



AI vs ML vs DL



Difference between machine learning and AI:

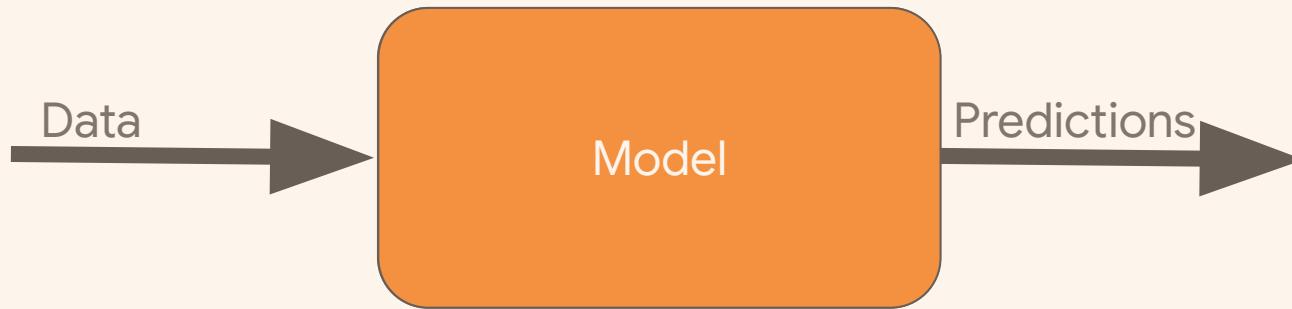
If it's written in Python, it's probably ML !

If it's written in PowerPoint, it's probably AI !

- Mat Velloso



Training Phase



Inference Phase

There's a **revolution** in
machine learning

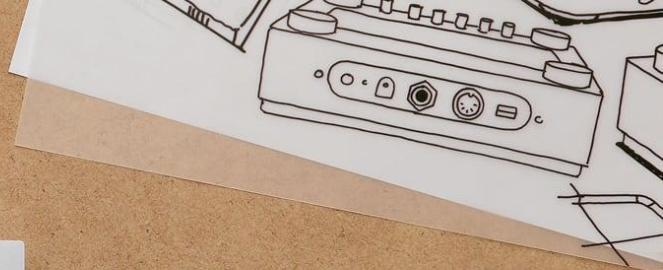
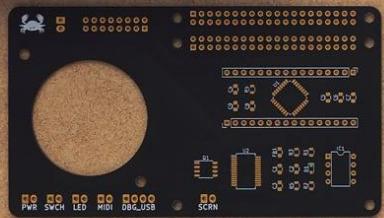


Image of retina



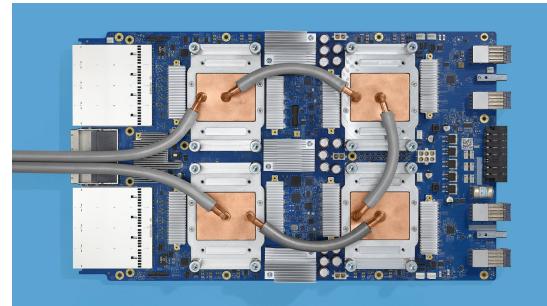
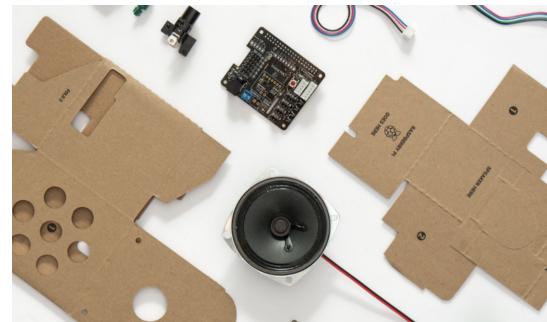
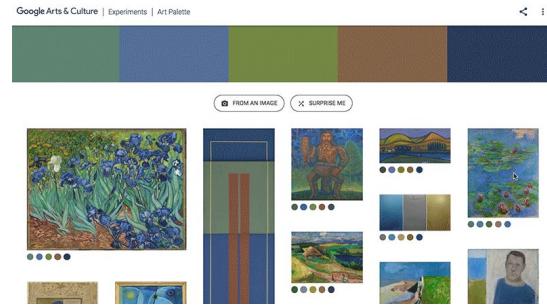
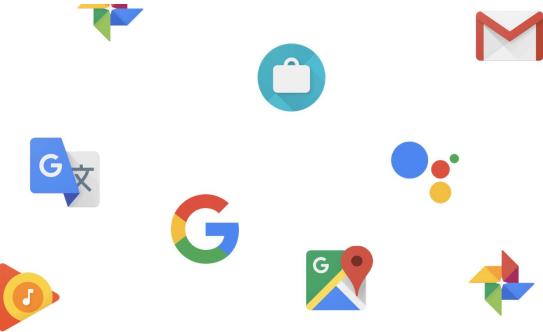
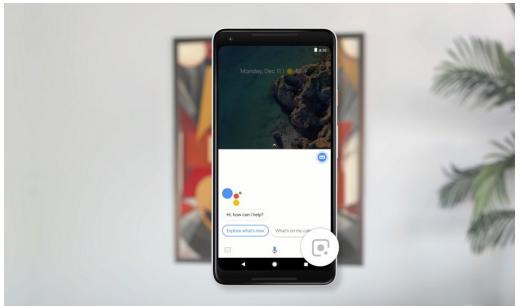
Blood pressure predictions
focus on blood vessels







A screenshot of a Gmail inbox. The top navigation bar shows 'Compose' and the search bar 'Search mail'. Below the search bar is a filter bar with 'Primary' selected. On the left, there's a sidebar with 'Index' (3), 'Starred' (1), 'Snoozed' (0), 'Important' (0), 'Work' (0), and 'More' (0). The main area shows an email from 'Salt Kulla' with the subject 'Trip to Campground National Park'. The email body says: 'Planning for a trip in July. Are you interested in...'. Below it is another email from 'Daniel Vickery' with the subject 'Book Swap'. The bottom of the screen shows the standard Gmail toolbar with 'Send', 'Reply', 'Forward', etc.



Traditional Programming vs ML

Traditional Programming

Explicit instructions
from programmer

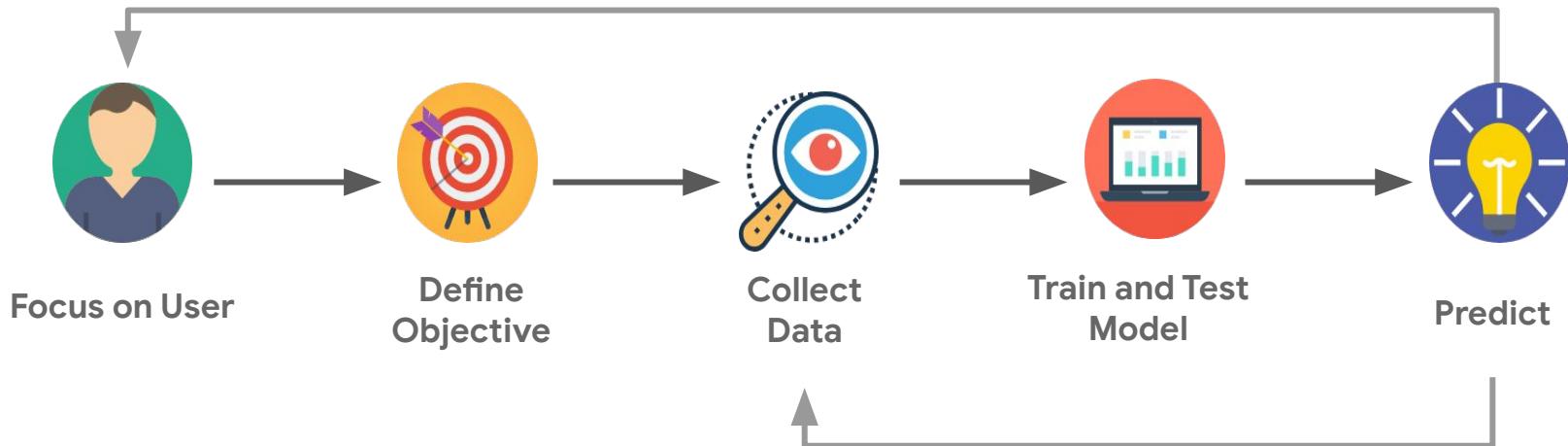
Improvements come
from better
algorithms

Machine Learning

System learns
patterns from data

Improvements may
also come from
additional data

What is Machine Learning?



Do you really need ML?

Career in machine learning?



NOW WE'RE TALKING

quickmeme.com

Machine Learning Market will be worth 8.81 Billion USD by 2022; growing at a CAGR of 44%.

- Forbes

Top 5 emerging jobs

1. Blockchain Developer
2. Machine Learning Engineer
3. Application Sales Executive
4. Machine Learning Specialist
5. Professional Medical Representative

**Data Scientist is ranked as best job on
Glassdoor**



- Around 40% graduates who apply for data science jobs are WOMEN.
- But in data science engineers, women make up only 26%.
- According to Harvard, men with 1 year of programming experience are as confident as women with 8 years of programming experience.
- Despite the rise of women-specific data science jobs , a large number of them remain open.

To Vandho Kya Che?

Mathematics or mathakootics?

- Linear algebra waiting for you to start learning data science



Syllabus

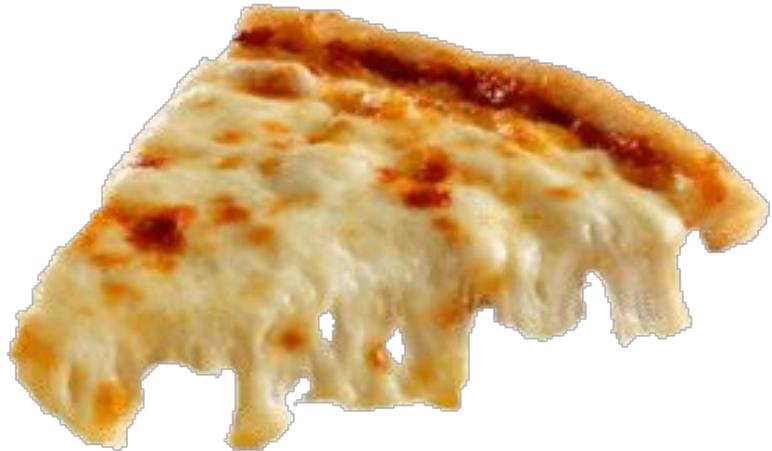
Openness

Need Help? Don't call 100!

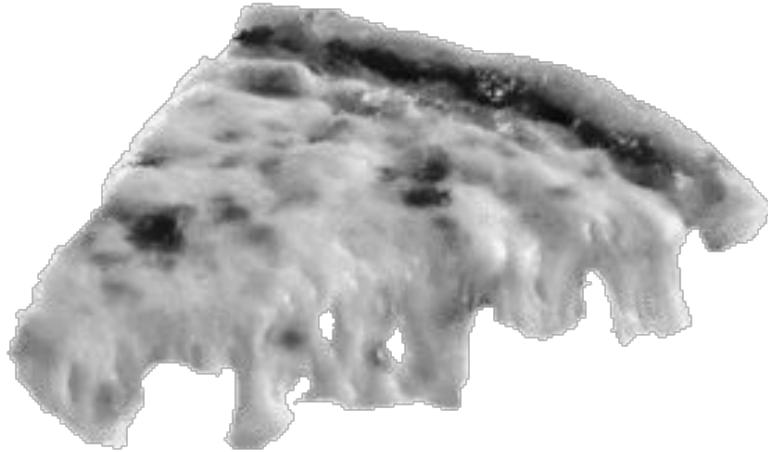
- Women Tech Makers (no promotion here, really serious)
- [Women in Machine Learning and Data Science \(WiMLDS\)](#)
- [Women in Big Data Forum](#)
- [Progressive Women's Leadership](#)
- OSS University



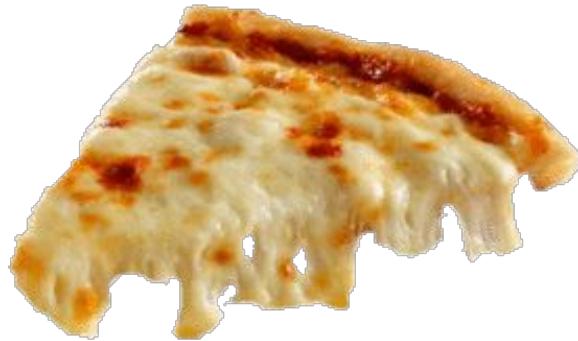
How would we classify these images?



So, what about this?



And now...?



Pair Work: Run an ML Experiment

1. Find a partner
2. Go to <https://sliceofml.withgoogle.com/>
3. Click "Let's do this"

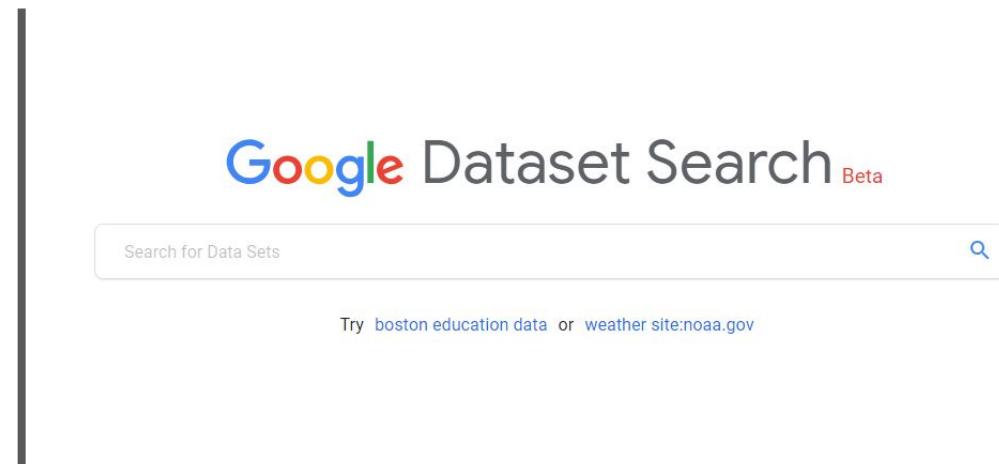


Tinkering with TensorFlow

<http://playground.tensorflow.org/>

Most important thing: DATA

kaggle



TensorFlow / PyTorch / Scikit-learn

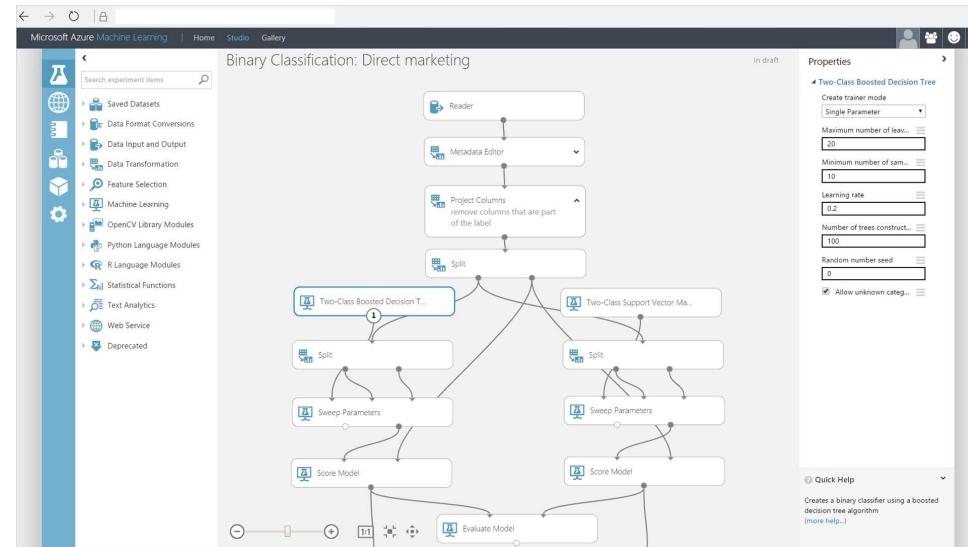


TensorFlow



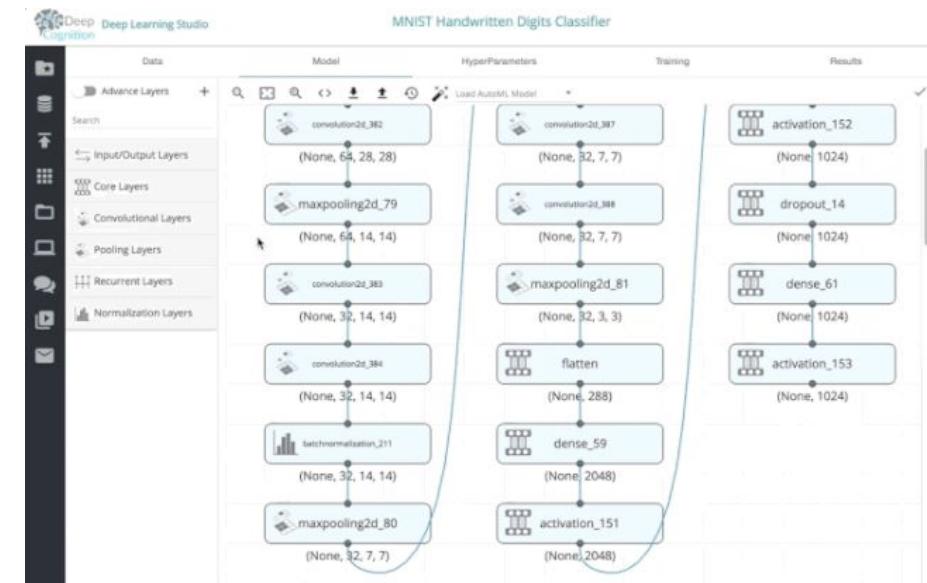
Machine Learning Studio by Microsoft

- Visual editor for composing, testing, refining, and deploying machine-learning models.



Deep Learning Studio by Deep Cognition

- Design, train, and deploy deep learning models without coding.
- Supports TensorFlow and MXNet.
- Works Offline



Which Algorithm to use?

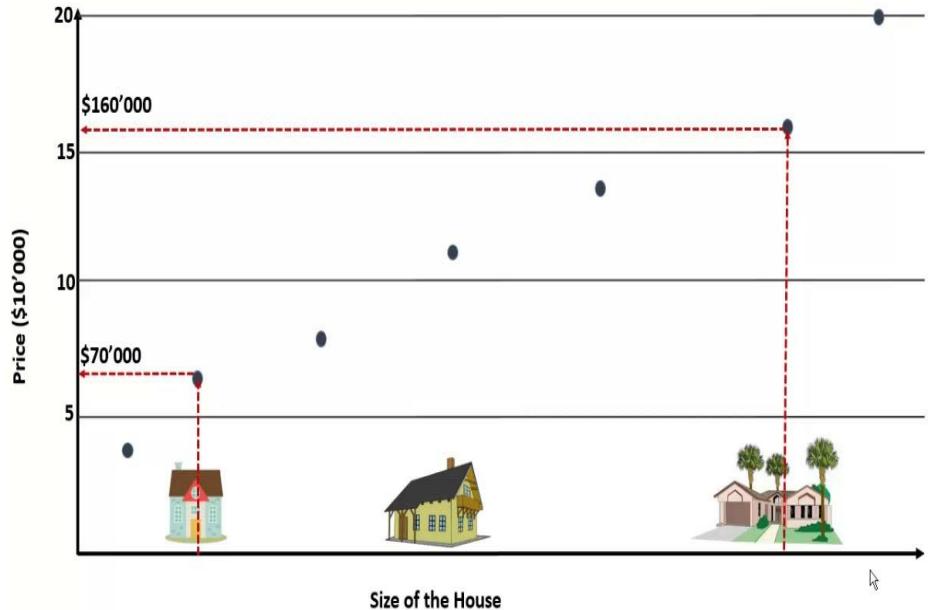
Classification

- Predict a category,
 - what income range you fall into
 - which cricket team you cheer
 - which political party you prefer
 - most famous, hotdog / not hotdog app



Regression

- Predict a value
 - Someone's income
 - The price of fuel
 - Or the skyrocketing price of house



Anomaly detection

- Find anomalies in the data
 - credit card fraud detection

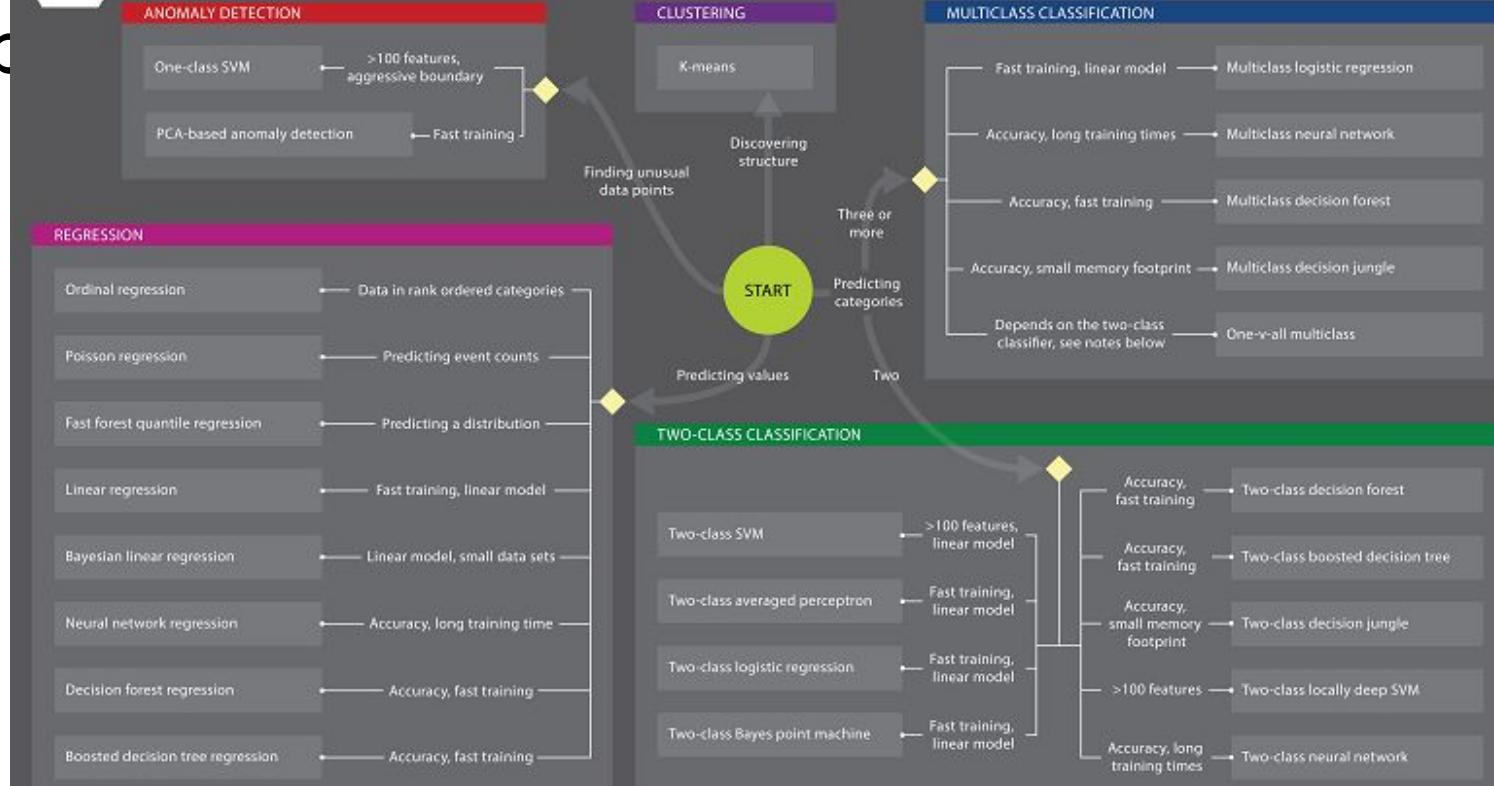




Microsoft Azure Machine Learning: Algorithm Cheat Sheet

This cheat sheet helps you choose the best Azure Machine Learning Studio algorithm for your predictive analytics solution. Your decision is driven by both the nature of your data and the question you're trying to answer.

http://



<http://tiny.cc/mlalgo>

OR

<https://bit.ly/2WHOAUe>

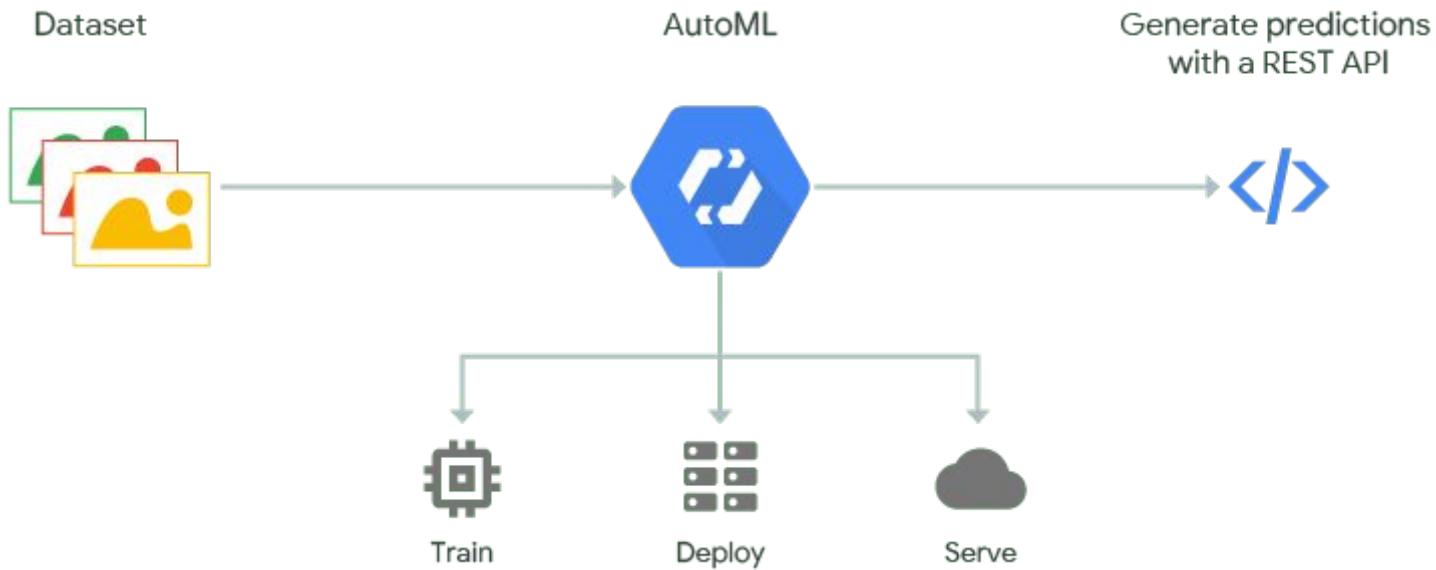
DOROTERTTHEYELLOWISNOW

BUT....WAIT! THERES MORE



memecrunch.com

AutoML





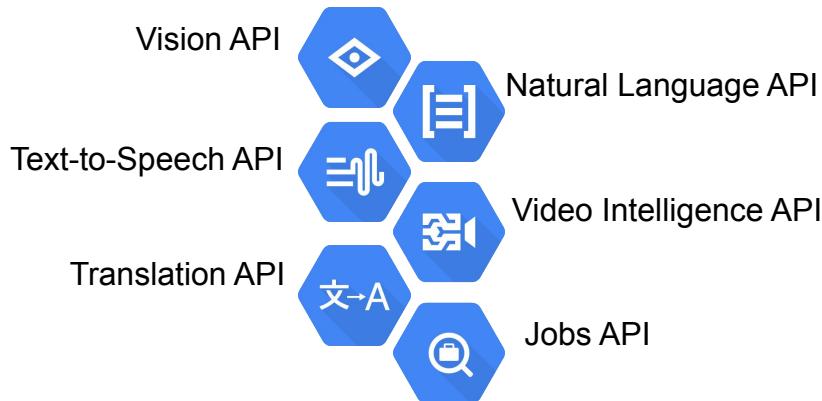
- Sun
- Cloud
- Sky
- Hills
- Birds



ML Kit
for Firebase

Machine Learning APIs

- Google



- Microsoft



Start your journey with ML !

- Data Science CS109 from Harvard- My favourite course indeed!
- CS224d Deep learning for Natural Language Processing, Stanford-
Really cool but Jedi level course!
- Shri Shri Shri Andrew Ng's machine learning course- Say no more!
- Deeplearning.ai's 4 course mastery to make you a DL expert!
- Udacity Deep learning Course- This would help you a lot. Really!

So are you ready for next revolution?

<https://goo.gl/3L9cGu>



Recap

Thank You !

