

# Machine Learning for SEOs



Britney Muller | Moz

 @BritneyMuller









WE IN THIS TOGETHER  
GIRLFRIEND!!!!

LINDA GET YOUR ASS BACK ON  
THESE EGGS!!!!

LINDA FINALLY DRANK WATER!!!  
OUR DUCKLINGS ARE GOING TO BE  
THE BEST!!!!





```
File "/anaconda2/lib/python2.7/site-packages/tensorflow/python/framework/ops.py", 11
ne 3392, in create_op
  op_def=op_def)
File "/anaconda2/lib/python2.7/site-packages/tensorflow/python/framework/ops.py", 11
ne 1718, in __init__
  self._traceback = self._graph._extract_stack() # pylint: disable=protected-access

NotFoundError (see above for traceback): tf_files/flower_photos/pumpkin-today.jpeg: No
such file or directory
[[Node: file_reader = ReadFile[_device="/job:localhost/replica:0/task:0/device:
CPU:0"]](file_reader/filename)]]

C1HRW3DQH3QK:tensorflow-for-poets-2 britneymuller$ python -m scripts.label_image -
-graph=tf_files/retrained_graph.pb --image=tf_files/flower_photos/pumpkin-today.j
pg
/anaconda2/lib/python2.7/site-packages/h5py/_init_.py:36: FutureWarning: Conversion
of the second argument of issubdtype from 'float' to 'np.floating' is deprecated. In f
uture, it will be treated as 'np.float64 == np.dtype(float).type'.
  from ._conv import register_converters as _register_converters
2018-06-19 00:01:01.582647: I tensorflow/core/platform/cpu_feature_guard.cc:140] Your
CPU supports instructions that this TensorFlow binary was not compiled to use: AVX2 FM
A

Evaluation time (1-image): 0.284s

pumpkin (score=0.95822)
roses (score=0.02422)
daisy (score=0.00971)
dandelion (score=0.00339)
linda (score=0.00310)
C1HRW3DQH3QK:tensorflow-for-poets-2 britneymuller$ python -m scripts.label_image -
-graph=tf_files/retrained_graph.pb --image=tf_files/flower_photos/Linda-today.jpg
/anaconda2/lib/python2.7/site-packages/h5py/_init_.py:36: FutureWarning: Conversion
of the second argument of issubdtype from 'float' to 'np.floating' is deprecated. In f
uture, it will be treated as 'np.float64 == np.dtype(float).type'.
  from ._conv import register_converters as _register_converters
2018-06-19 00:01:26.152530: I tensorflow/core/platform/cpu_feature_guard.cc:140] Your
CPU supports instructions that this TensorFlow binary was not compiled to use: AVX2 FM
A

Evaluation time (1-image): 0.180s

linda (score=0.49169)
pumpkin (score=0.47849)
roses (score=0.02144)
sunflowers (score=0.00470)
dandelion (score=0.00338)
C1HRW3DQH3QK:tensorflow-for-poets-2 britneymuller$
```





I have no idea what I'm doing

A-Z RECENT DURATION

Category



22 min

Android &amp; TensorFlow: Artistic Style Transfer

START

madd  
Updated May 15, 2018

213 min

End-to-end Machine Learning with Tensorflow on GCP

START

Updated Jun 9, 2018



26 min

Nest Cam &amp; TensorFlow Codelab

START

Updated Apr 26, 2018



77 min

TensorFlow For Poets

START

Updated May 30, 2018



149 min

TensorFlow and deep learning, without a PhD

START

Updated Jun 12, 2018



40 min

TensorFlow for Poets 2: TFLite Android

START

Mark Daoust  
Updated May 9, 2018



bit.ly/tf-for-poets

1 Introduction

2 Setup

3 Download the training images

4 (Re)training the network

5 Training And TensorBoard (Optional)

6 Using the Retrained Model

7 Trying Other Hyperparameters (Optional)

8 Training on Your Own Categories (Optional)

9 Next steps

Did you find a mistake? [Please file a bug](#)

← TensorFlow For Poets

🕒 21 min remaining

## 1. Introduction

[TensorFlow](#) is an open source library for numerical computation, specializing in machine learning applications.

### What you will build

In this codelab, you will learn how to run TensorFlow on a single machine, and will train a simple classifier to classify images of flowers.




Image CC-BY by Retinafunk

```
daisy (score = 0.99871)
sunflowers (score = 0.00595)
dandelion (score = 0.00252)
roses (score = 0.00210)
```

Next

flower\_photos

Search



daisy



dandelion



LICENSE.txt



Linda



Pumpkin



roses



sunflowers

ImageNet is an image database organized according to the **WordNet** hierarchy (currently only the nouns), in which each node of the hierarchy is depicted by hundreds and thousands of images. Currently we have an average of over five hundred images per node. We hope ImageNet will become a useful resource for researchers, educators, students and all of you who share our passion for pictures.

[Click here](#) to learn more about ImageNet, [Click here](#) to join the ImageNet mailing list.



What do these images have in common? *Find out!*

[Check out the ImageNet Challenge on Kaggle!](#)



Small wild or domesticated web-footed broad-billed swimming bird usually having a depressed body and short legs

1642  
pictures

84.21%  
Popularity  
Percentile

Wordnet  
IDs

Numbers in brackets: (the number of synsets in the subtree ).

ImageNet 2011 Fall Release (32326)

plant, flora, plant life (4486)

- geological formation, formation (1:

natural object (1112)

– sport, athletics (176)

artifact, artefact (10504)

fungus (308)

person, individual, someone, somet

animal, animate being, beast, brute

- invertebrate (766)

homeotherm, homeiotherm, hor

work animal (4)

darter (0)

survivor (0)

range animal (0)

creepy-crawly (0)

domestic animal, domesticated

molter, moulter (Q)

varmint, varment (0)

mutant (O)

critter (0)

name (47)

- young, offspring (45)

poikilotherm, ectotherm (0)

herbivore (0)

needer (0)

pest (1)

female (4)

insectivore (0)

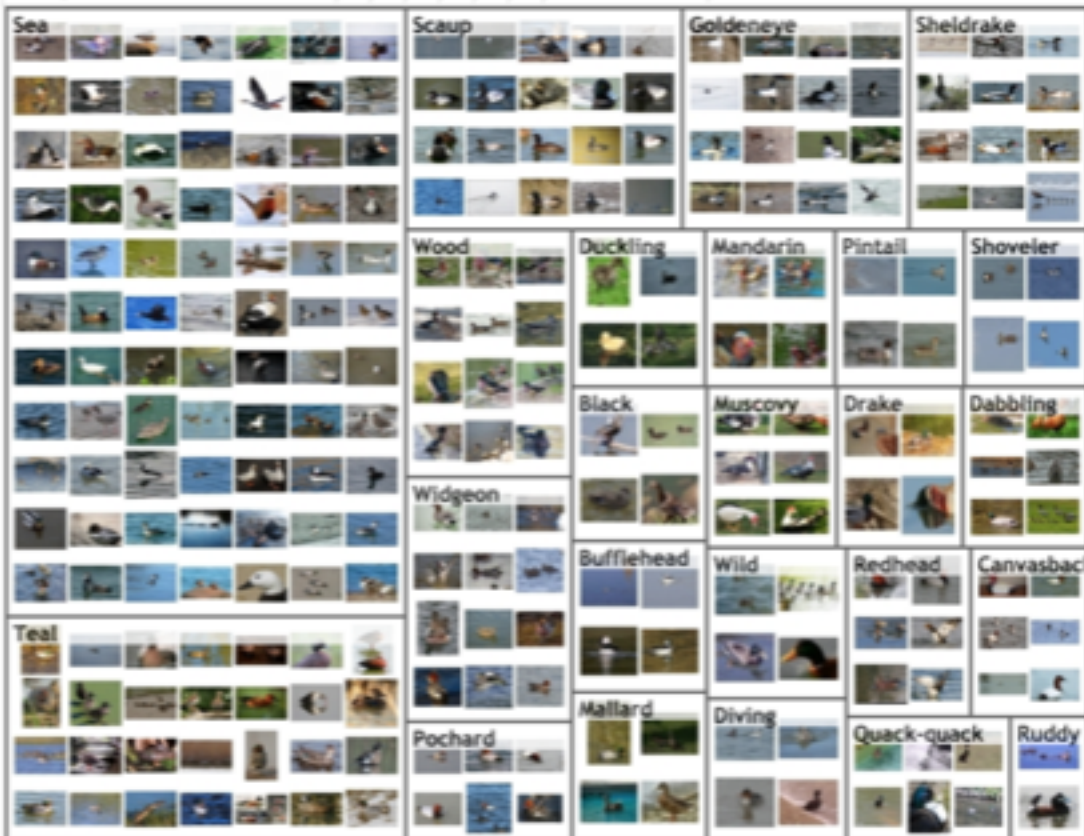
net (0)

### Treemap Visualization

[Images of the Synset](#)[Downloads](#)

[ImageNet 2011 Fall Release](#) / [C](#) / [A](#) / [E](#) / [I](#) / [N](#) / Anseriform bird / Duck

Anseriform blind Duck



# Rock python, rock snake, Python sebae

Very large python of tropical and southern Africa

1004  
pictures

65.29%  
Popularity  
Percentile

Wordnet  
IDs

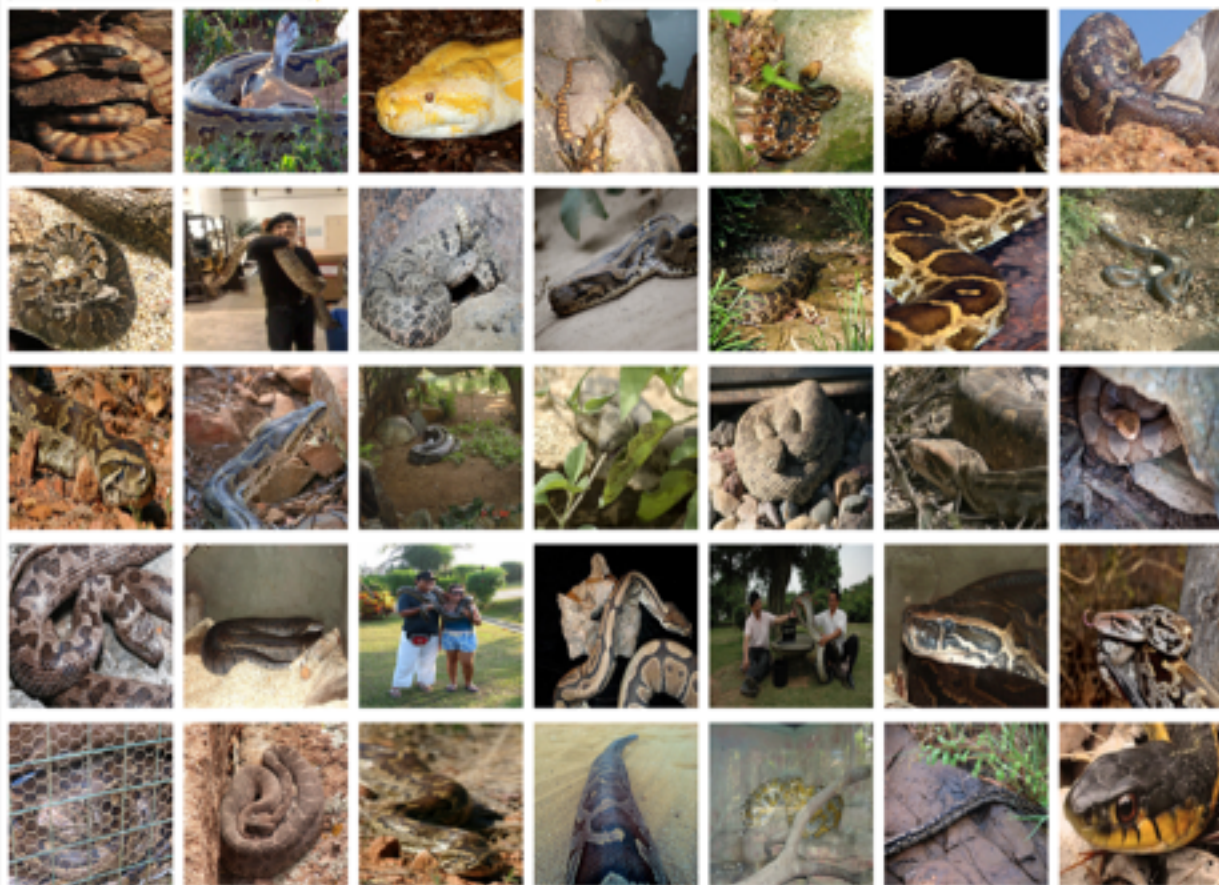
Numbers in brackets: (the number of synsets in the subtree).

- ImageNet 2011 Fall Release (32326)
  - plant, flora, plant life (4486)
  - geological formation, formation (1112)
  - natural object (1112)
  - sport, athletics (176)
  - artifact, artefact (10504)
  - fungus (308)
  - person, individual, someone, somebody (1191)
  - animal, animate being, beast, brute, creature, fauna (2271)
    - invertebrate (766)
    - homeotherm, homoiotherm, homeothermic (11)
    - work animal (4)
    - darter (0)
    - survivor (0)
    - range animal (0)
    - creepy-crawly (0)
    - domestic animal, domesticated (11)
    - molt, moult, moult (0)
    - varmint, varment (0)
    - mutant (0)
    - critter (0)
    - game (47)
    - young, offspring (45)
    - poikilotherm, ectotherm (0)
    - herbivore (0)
    - peeper (0)
    - nest (1)

Treemap Visualization

Images of the Synset

Downloads





# G'NIGHT



```
Last login: Thu Jul 5 14:35:48 on ttys002
C1MRW3DQH3QK:~ britneymuller$ cd tensorflow-for-poets-2
C1MRW3DQH3QK:tensorflow-for-poets-2 britneymuller$ python -m scripts.label_image
--graph=tf_files/retrained_graph.pb --image=tf_files/flower_photos/
1e.jpg
/anaconda2/lib/python2.7/site-packages/h5py/__init__.py:36: FutureWarning: Co
rsion of the second argument of issubdtype from `float` to `np.floating` is d
ecated. In future, it will be treated as `np.float64 == np.dtype(float).type`
  from ._conv import register_converters as _register_converters
2018-07-05 17:45:46.053777: I tensorflow/core/platform/cpu_feature_guard.cc:1
Your CPU supports instructions that this TensorFlow binary was not compiled
use: AVX2 FMA

Evaluation time (1-image): 0.202s
pumpkin (score=0.99691)
daisy (score=0.00172)
dandelion (score=0.00084)
roses (score=0.00027)
sunflowers (score=0.00010)
C1MRW3DQH3QK:tensorflow-for-poets-2 britneymuller$
```



▼ Name & Extension:

dapper-rand.png

☒ Hide extension

▼ Comments:

► Open with:

▼ Preview:



photos"

tensorflow-for-poets-2 — -bash • python — 80x24

```
NotFound error (see above for traceback): tf_files/flower_photos/dapper-rand.jpg:  
No such file or directory  
[[Node: file_reader = ReadFile[_device="/job:localhost/replica:0/task:0  
/device:CPU:0"]](file_reader/filename)]]
```

```
(C1MRW3DQH3QK:tensorflow-for-poets-2 britneymuller$ python -m scripts.label_image  
--graph=tf_files/retrained_graph.pb --image=tf_files/flower_photos/dap  
per-rand.png  
/anaconda2/lib/python2.7/site-packages/h5py/_init_.py:36: FutureWarning: Conve  
rsion of the second argument of issubdtype from 'float' to 'np.floating' is depr  
ecated. In future, it will be treated as 'np.float64 == np.dtype(float).type'.  
  from ._conv import register_converters as _register_converters  
2018-06-25 13:26:12.802672: I tensorflow/core/platform/cpu_feature_guard.cc:140]  
Your CPU supports instructions that this TensorFlow binary was not compiled to  
use: AVX2 FMA
```

Evaluation time (1-image): 0.215s

```
pumpkin (score=0.39317)  
roses (score=0.30072)  
sunflowers (score=0.21804)  
daisy (score=0.05944)  
tulips (score=0.02277)
```

```
C1MRW3DQH3QK:tensorflow-for-poets-2 britneymuller$
```



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beard

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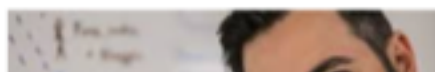
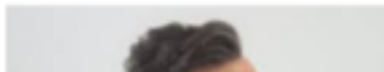
geraldine

cal

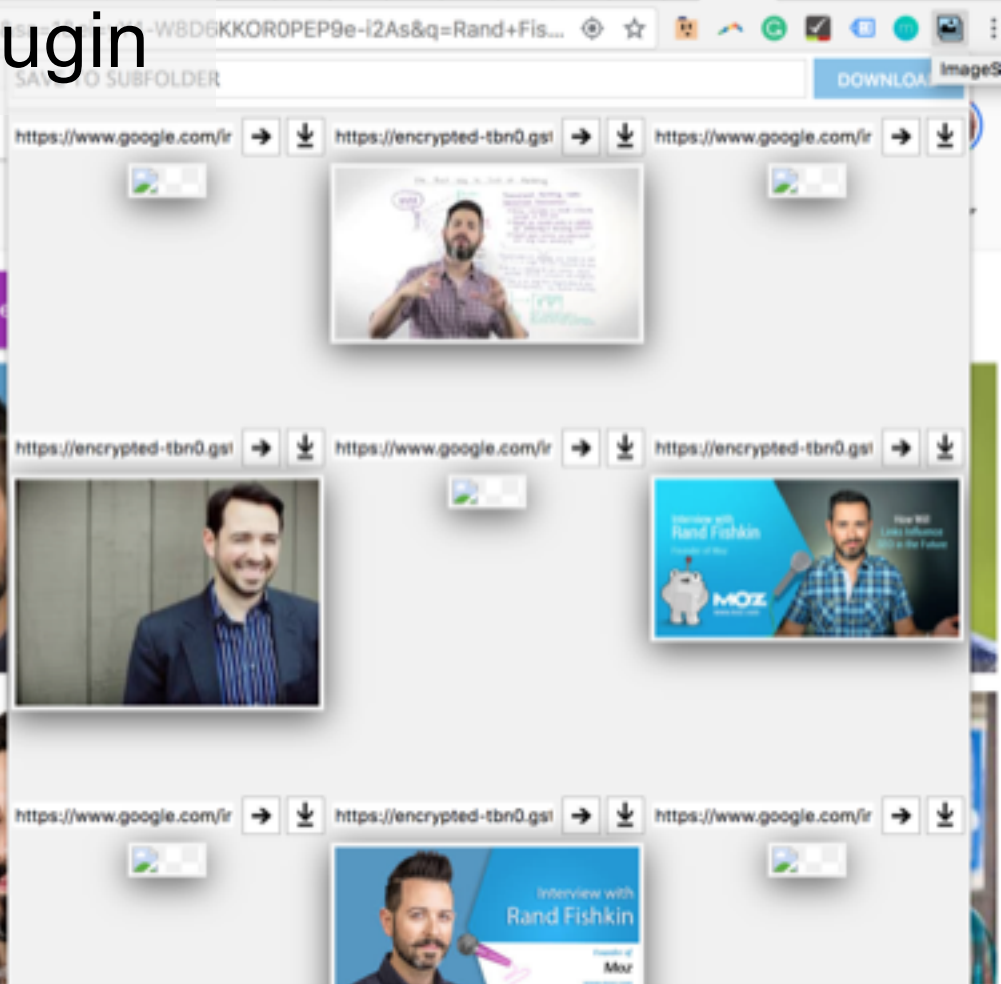
caleb



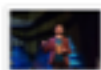
THE  
PARADOX OF  
EXCEPTIONAL  
MARKETING  
RAND FISHKIN  
BOOK YOUR SEAT



# Image Spark Chrome Plugin







images (5).jpeg



images (6).jpeg



images (7).jpeg



images (8).jpeg



images (9).jpeg



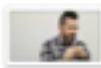
download (1).jpeg



download (2).jpeg



download (3).jpeg down



images (10).jpeg



images (11).jpeg



images (12).jpeg



images (13).jpeg



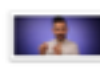
images (14).jpeg



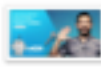
download (7).jpeg



download (8).jpeg



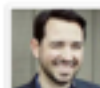
download (9).jpeg d



images (15).jpeg



images (16).jpeg



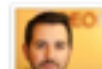
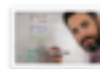
images (17).jpeg



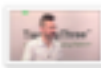
images (18).jpeg



images (19).jpeg

download  
(13).jpegdownload  
(14).jpeg

download.jpeg ima



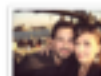
images (20).jpeg



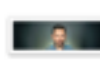
images (21).jpeg



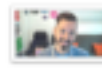
images (22).jpeg



images (23).jpeg



images (24).jpeg



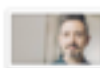
images (4).jpeg



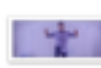
images (25).jpeg



images (26).jpeg



images (27).jpeg



images (28).jpeg



images (29).jpeg



images (30).jpeg



images (

▼ Name & Extension:

dapper.png

☒ Hide extension

► Comments:

► Open with:

▼ Preview:



65% Probability this is Rand!

```
roses (score=0.00129)
dandelion (score=0.00004)
```

```
britemuller$ python -m s
les/retrained_graph.pb --image=tf_files/flower_photos/dap
/anaconda2/lib/python2.7/site-packages/h5py/__init__.py:36: Fu
d argument of isinstance from 'float' to 'np.floating' is depr
d as 'np.float64 == np.dtype(float).type'.
    from ._conv import register_converters as _register_converte
2018-07-05 14:31:26.431895: I tensorflow/core/platform/cpu_fea
instructions that this TensorFlow binary was not compiled to
```

Evaluation time (1-image): 0.226s

rand (score=0.64928)

sunflowers (score=0.26536)

roses (score=0.08532)

pumpkin (score=0.05453)

daisy (score=0.00464)

C1MRW3DQH3QK:tensorflow-for-poets-2 britneymuller\$



last-name-is-  
rose-ge...-right-ml

is-will-famous.jpg

# Automated Image Optimization

A search bar with a camera icon, a microphone icon, and a magnifying glass icon on the right side.

Discover architecture through Monet's brushstrokes

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Macy's / Women / New Arrivals

**4737** items in New Arrivals

**Filter By**

Apparel Type +

Brand +

Size Range +

Size +

Color +

Customer Ratings +

Price +

All Items (4737)

Free Pick Up

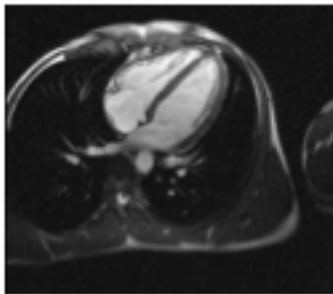
Sort by

Featured Items ▼





ML is everywhere!



3,327 Pages View

28.30% to new visit

### Traffic Sources Overview



■ Direct Traffic  
3,097.00 (40.49%)  
■ Search Engines  
2,910.00 (38.04%)  
■ Referring Sites  
1,642.00 (21.47%)

### Map Overlay



### Visitors Overview



Visitors  
2,958

### Content Overview

Page	Views	Visits
Information - Overview	1,100	1,100
Information - Overview	1,100	1,100
Information - Overview	1,100	1,100
Information - Overview	1,100	1,100
Information - Overview	1,100	1,100





Isn't ML SO Exciting!?



**1. Let's break down Machine Learning**

2. Discuss other ML applications for SEO

3. Tools & Resources



# What is Machine Learning?

Machine Learning is a subset of AI that combines statistics & programming to give computers the ability to “learn” without explicitly being programmed.



# An AI Timeline

## Birth of AI



- Information Theory – digital signals
- Cybernetics – thinking machines
- The Turing Test
- Symbolic reasoning

## Focus on Specific 'Intelligence'



- Expert Systems (knowledge)
- Neural networks make a comeback
- Optical character recognition
- Speech recognition

## Focus on Specific Problems



- Machine learning
- Deep learning – pattern analysis / classification
  - Big data: large databases
  - Fast processors to crunch data
  - High-speed networks

1950 1960 1970 1980 1990 2000 2010 2020



- Limited computer processing power
- Limited database capacity
- Limited networking capabilities
- Real-world problems are complicated
  - Image processing / face recognition
  - Combinatorial explosion



- Disappointing results
- Collapse of dedicated hardware vendors

AI Winter

AI Winter II

# Lady Ada Lovelace

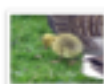
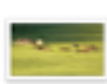
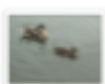
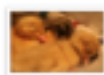
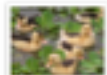
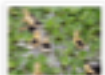
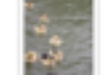
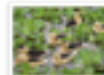
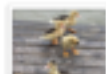
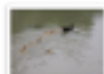
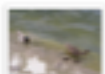
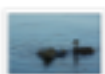
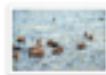
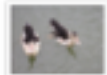
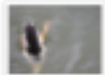
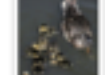
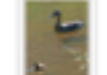
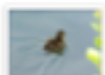
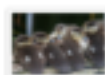
Inspired Machine Learning  
1843.

Alan Turing later referred to  
it as “Lady Lovelace’s  
objection.”



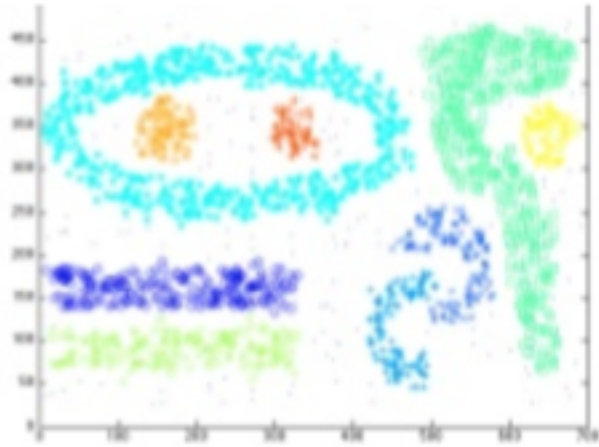


# Supervised vs. Unsupervised

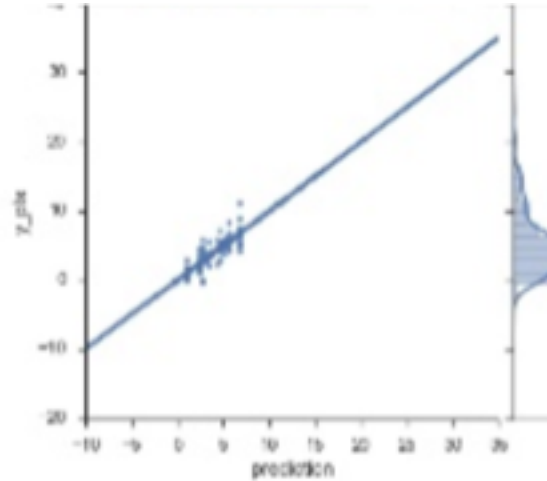
56255287-  
duckling.jpeg482827021\_2b45  
a1e12b.jpeg528271654\_3290  
7bb668.jpeg528448757\_4f811  
eec8b.jpeg529638498\_856d  
9bd5fb.jpeg531892539\_b088  
772999.jpeg533129298\_e04e  
41f8a0.jpeg539193436\_49ae  
79d820.jpeg541972305\_7e4ef  
b469b.jpeg543170513\_b88c  
185eb4.jpeg547611014\_10819  
b5fc7.jpeg547613186\_8826  
a3fdd6.jpeg547632811\_da8b  
92a46b.jpeg547635892\_55d3  
4cce46.jpeg547648448\_bf10  
7dd10c.jpeg547650105\_cceb  
73f982.jpeg547679233\_92fe  
679276.jpeg547698239\_ce92  
dec1cf.jpeg557938358\_7721  
dc58e8.jpeg559197201\_cbeab  
7930b.jpeg559850828\_b028  
5cc752.jpeg559851072\_6663  
155628.jpeg560692003\_7c8c  
cf0fee.jpeg568168683\_901c  
b199ec.jpeg584597688\_8d9a  
abfabf.jpeg607697735\_05a2  
d0fc52.jpeg630186557\_4799  
2325e2.jpeg631038394\_aed7  
c6dabe.jpeg639412025\_2073  
5b51ff.jpeg644947574\_aaf5  
9167f2.jpeg685585155\_5c2f  
42044b.jpeg688932913\_ff9f6  
230db.jpeg711745639\_ac85e  
ce849.jpeg742998800\_552b  
438b52.jpeg752981149\_ab9a  
4b5f9f.jpeg763103476\_c14f6  
e16a1.jpeg827711688\_e2b6  
a5ec45.jpeg873700607\_f598  
407619.jpeg873840969\_fe58  
c3ada6.jpeg907955818\_edb0  
1f9703.jpeg



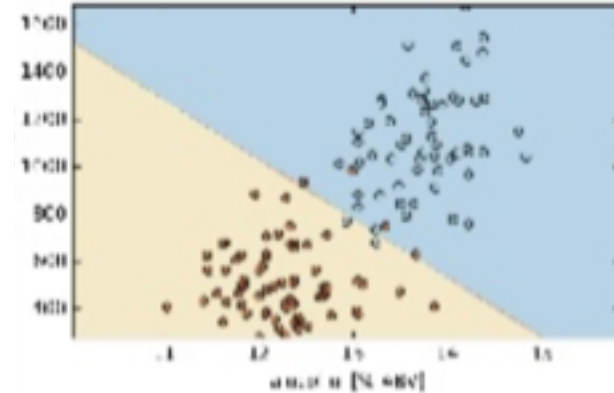
# Three Common Models:



**Clustering:**



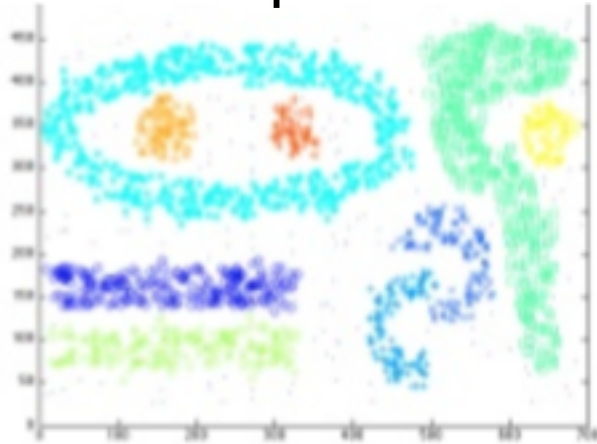
**Regression:**



**Classification:**

# Three Common Models:

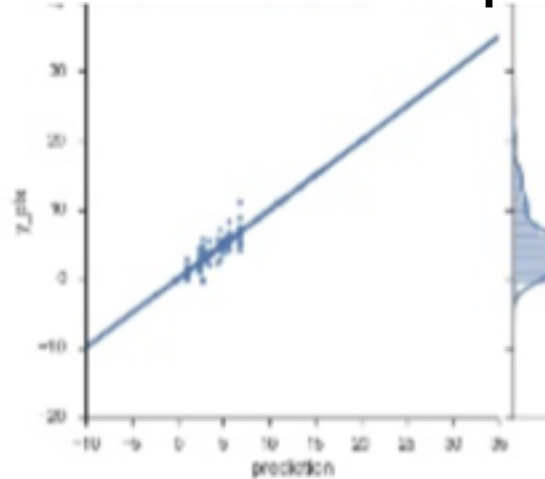
## Unsupervised



**Clustering:**

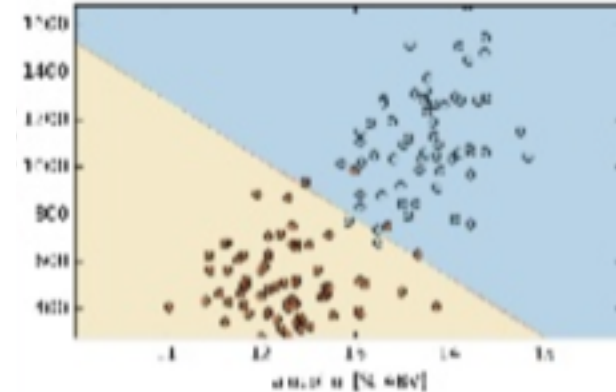
Animal Types

## Supervised



**Regression:**

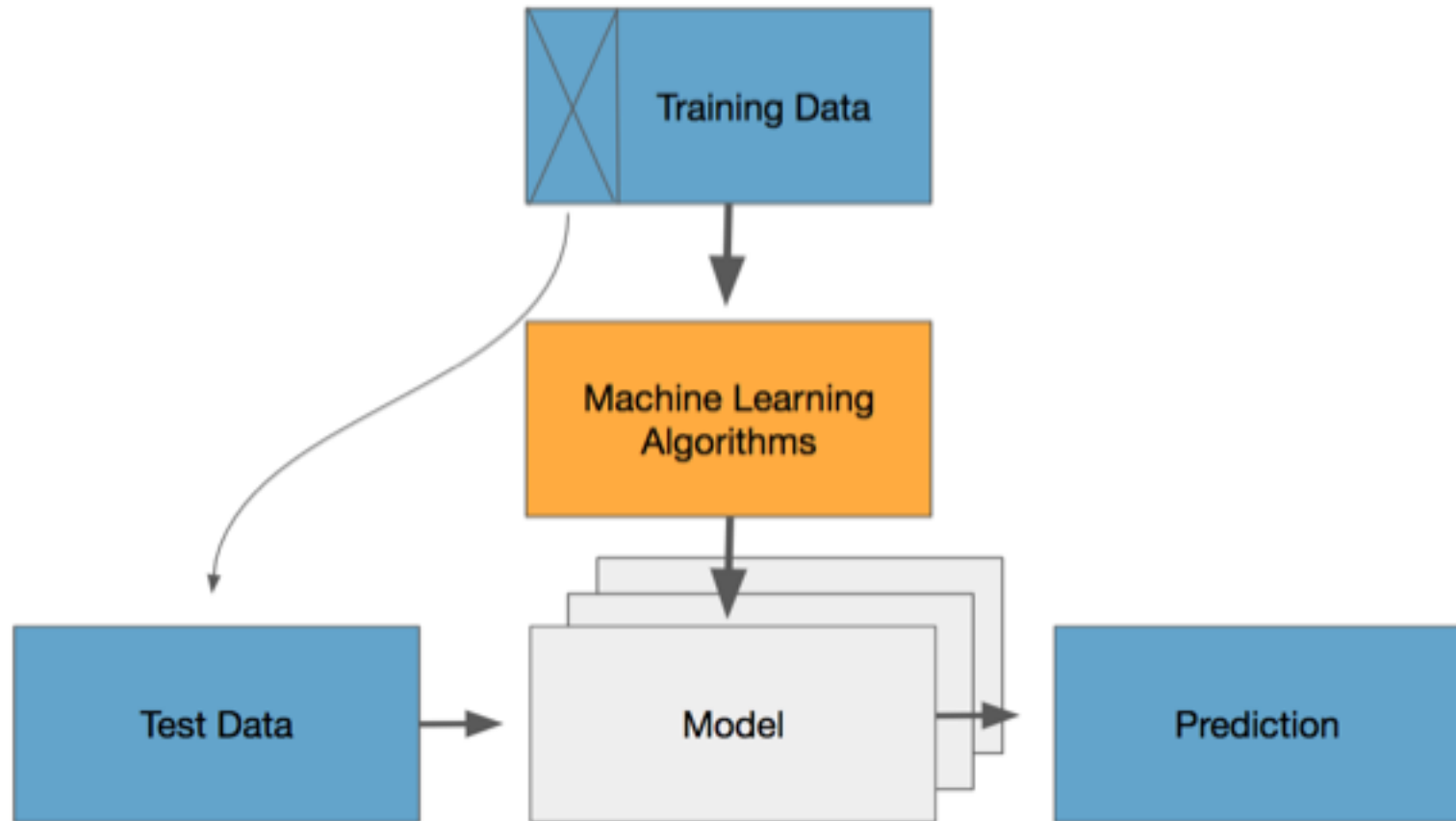
Home size vs  
selling price



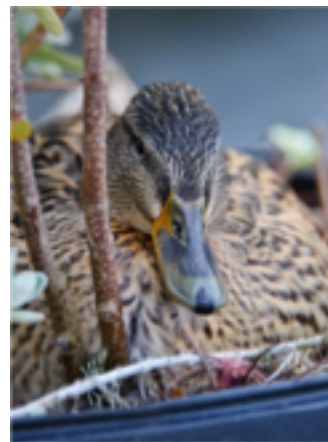
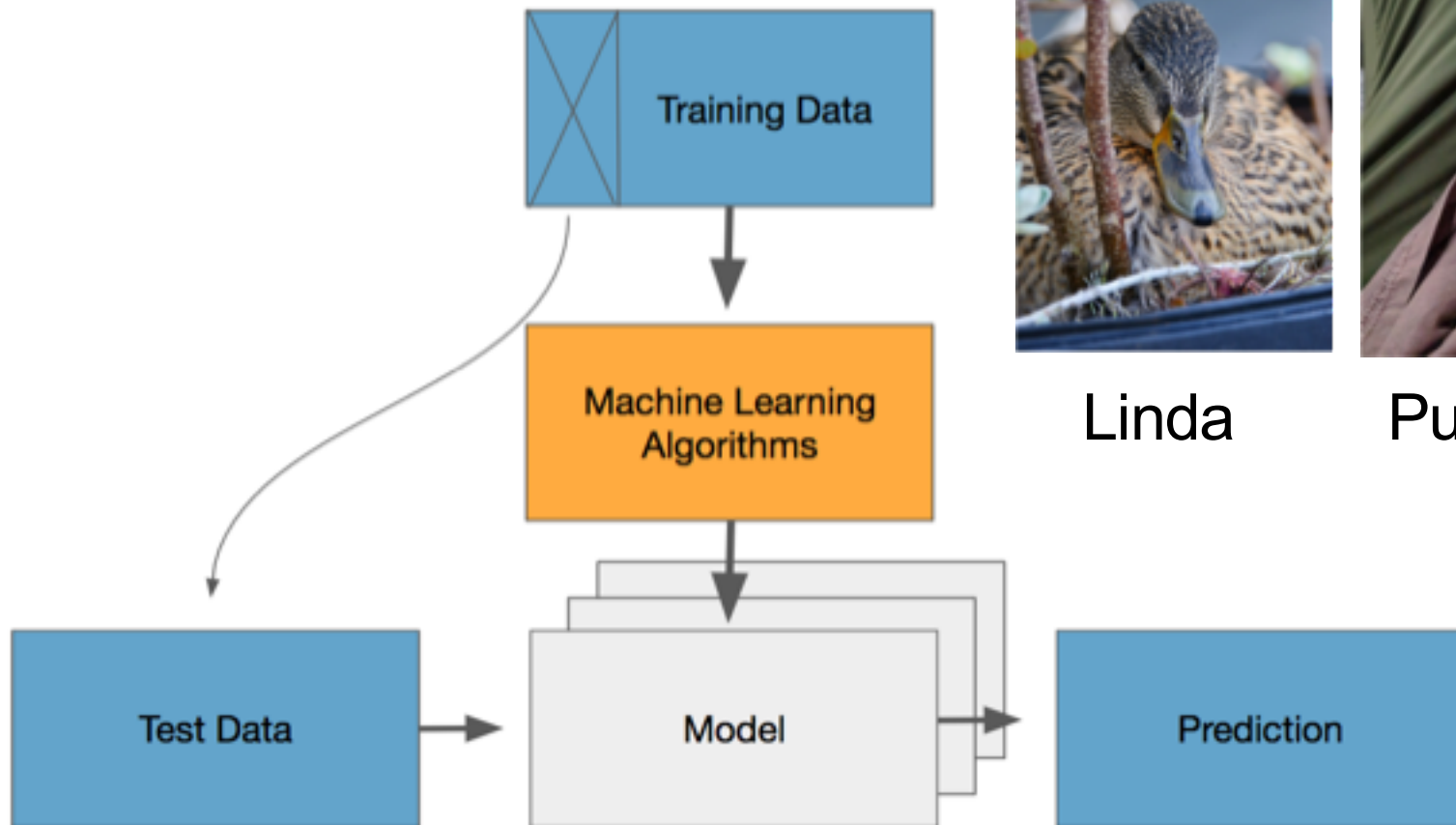
**Classification:**

Duck or Snake?

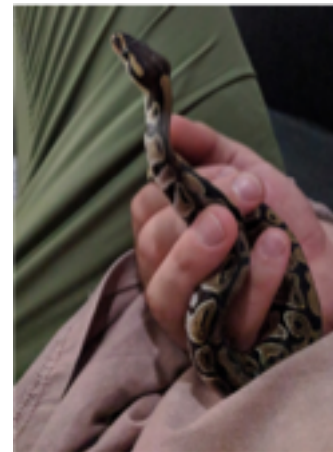
# Typical Machine Learning Process



# Typical Machine Learning Process



Linda



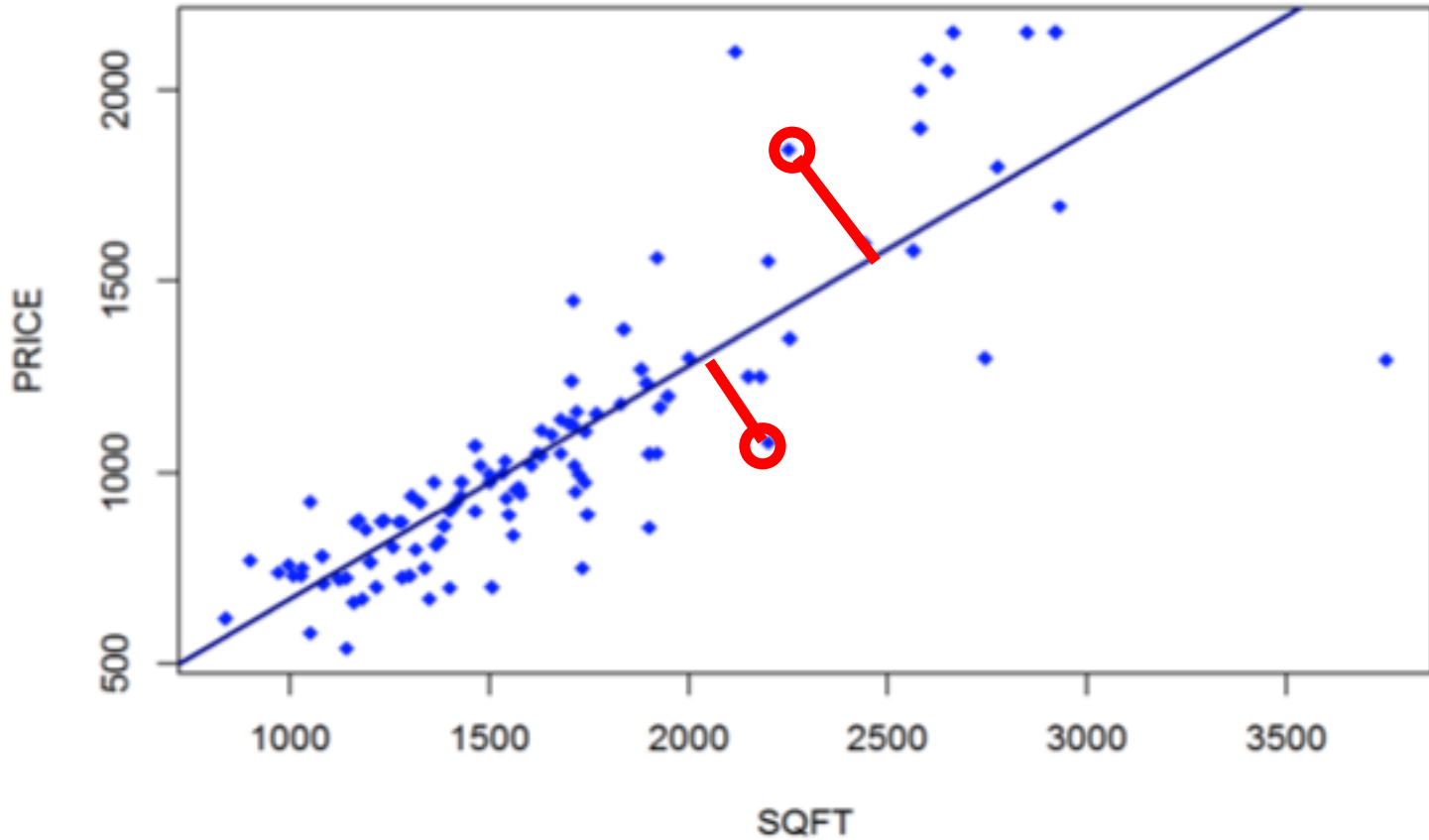
Pumpkin



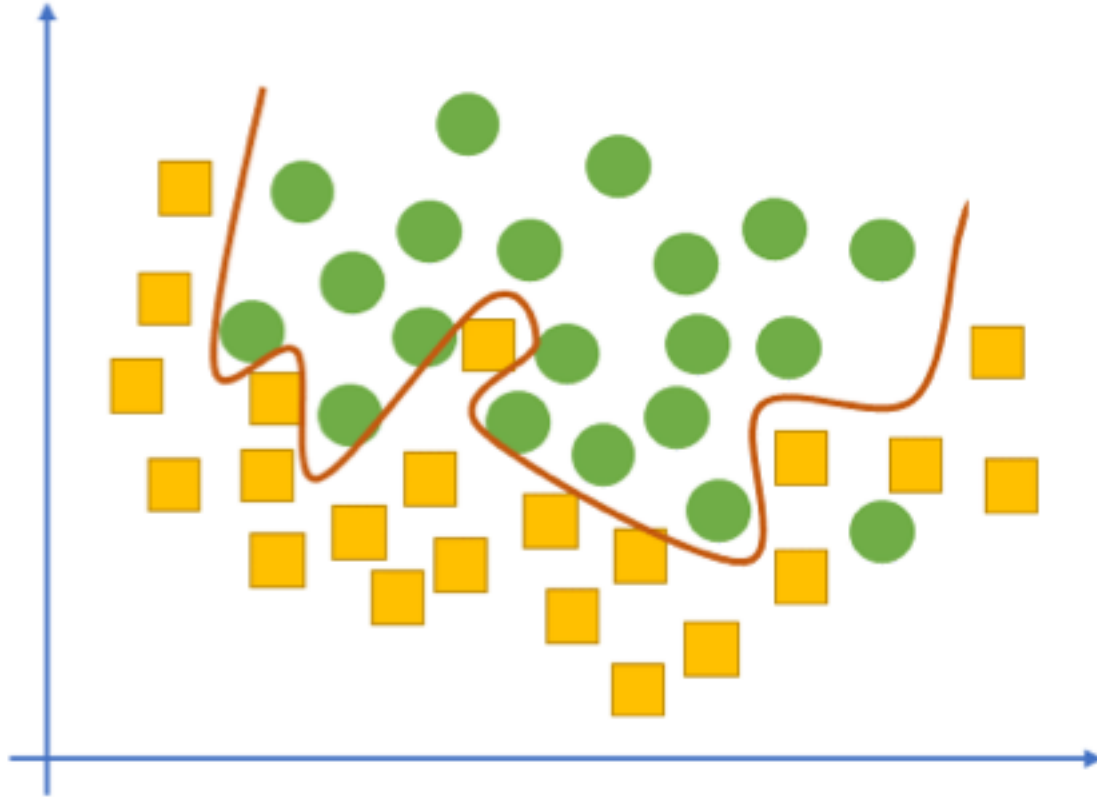
But, how do ML models get smarter?



# The Loss Function:



Overfitting is a common problem in ML



A photograph of a wooden bed frame with a mattress that has been cut into the shape of the number 4. The bed is on a wooden floor. The text "THE BEST WAY TO EXPLAIN OVERFITTING" is overlaid at the bottom in large, white, bold, sans-serif font with a black outline.

**THE BEST WAY TO  
EXPLAIN OVERFITTING**



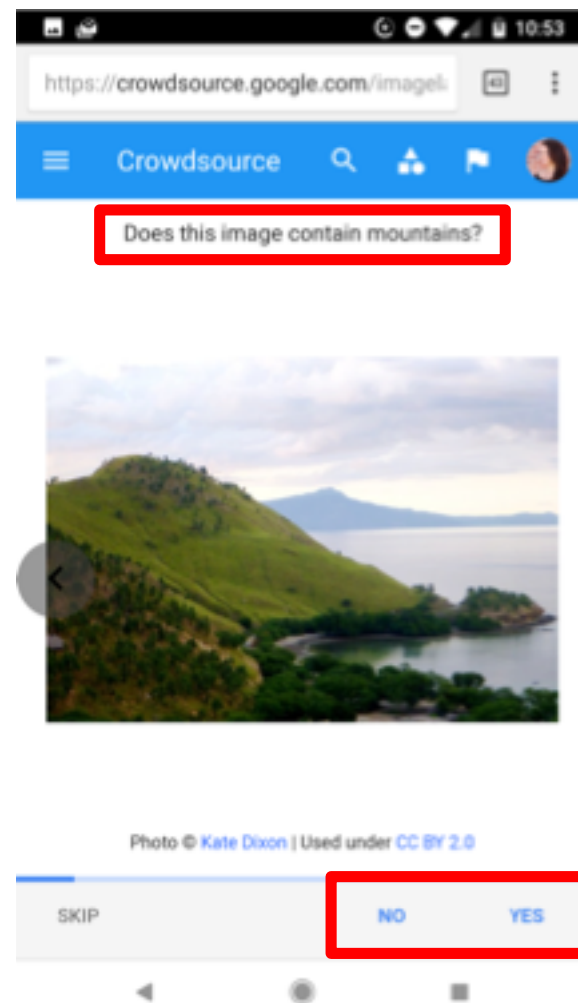
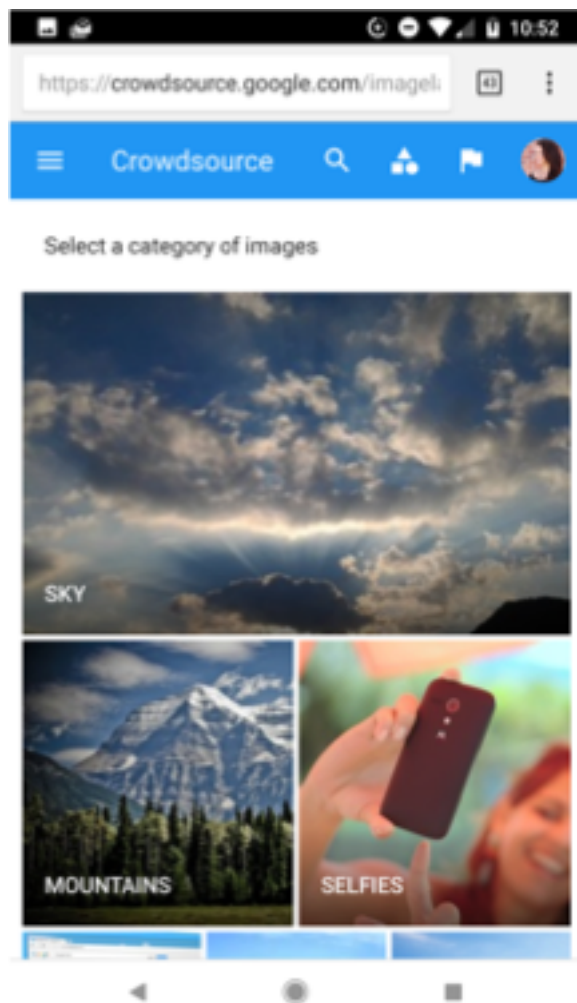
If Machine Learning was a car,  
data would be the fuel



Select all squares with  
**street signs**



VERIFY



1. What is Machine Learning & why you should care?

**2. How can you apply ML to SEO?**

3. Tools & Resources





# Voice Search Opportunities





Build Actions for the Google Assistant with Actions on Google.

[GO TO ACTIONS CONSOLE](#)




## Help users get things done across Google

Engage billions of users across the Google Assistant and soon Google Search, Android, and other surfaces by developing Actions and linking them with our ever-growing intents catalog.

[START BUILDING](#)

[LEARN MORE](#)

# Templates:



**Trivia**

Create your own game show with different questions, topics, and levels of difficulty.


[Learn more](#) 

**BUILD**




**Flash Cards**

Study any subject by creating flashcards to quiz yourself and others.


[Learn more](#) 

**BUILD**











**Personality Quiz**

Craft a personality quiz with different traits and outcomes.

[Learn more](#) 

**BUILD**

666

 Fulfillment Integrations Training History Analytics Prebuilt Agents Small Talk Docs Forum Support Account Logout

QUESTION Do you have a hobby?

ANSWER 1 Enter a Answer

QUESTION Are you hungry?

ANSWER 1 Enter a Answer

QUESTION Will you marry me?

ANSWER 1 Enter a Answer

QUESTION Are we friends?

ANSWER 1 Enter a Answer

QUESTION Where do you work?

ANSWER 1 Enter a Answer

English ▼ ⓘ

**Details**

You can use this app to The Moz SEO Quiz is a fun game to test y... ▼

**Images**

Large banner and small logo uploaded ▼

**Contact details**

Moz, britneym@moz.com ▼

**Privacy and consent**<https://moz.com/privacy-policy>, <https://moz.com/terms-of-use> ▼**Additional Information**

Category, Transactions, Testing Instructions ▼

Preview of your Actions in the Actions directory: [Learn more](#)

# SEO Quiz

## MOZ

Moz SEO Quiz  
MozLevel up your SEO skills today!  
The Moz SEO Quiz is the world's premier SEO triv ..."I want to talk to Moz SEO Quiz"  
"let me speak to Moz SEO Quiz"  
"can I talk to Moz SEO Quiz"  
"ask Moz SEO quiz what's good"  
"ask Moz SEO quiz to test me"Category: Education & reference  
[britneym@moz.com](mailto:britneym@moz.com)





## Moz SEO Quiz was not approved

Unfortunately, version 1 of Moz SEO Quiz with project ID [REDACTED] was not approved at this time. But don't worry, you can fix your app and resubmit!

The invocation name you provided, "moz es ee oh quiz", is not being audibly recognized, picked up as "ma's seo quiz". You could try changing the phonetic spelling, or perhaps c

1. Your app name can not be recognized properly when converted to audio. Please try another name instead.

Thank you for submitting your assistant app for review!

The invocation name you provided, "moz es ee oh quiz", is not being audibly recognized, and is instead being picked up as "ma's seo quiz". You could try changing the phonetic spelling, or perhaps come up with a different invocation name. (This must be relevant to the naming of your app.) If this is your brand name and/or if you want to keep this name, please contact our support team with a recording of you pronouncing the name.

Feel free to submit a new version once you address this feedback, and we'll be happy to review your Assistant app again. If you would like additional help, check out our [G+ community](#). If you would like to appeal the review decision, [reach out to our support team](#).

SEO Quiz was approved



Inbox x



**Actions on Google** <actions-noreply@google.com>  
to me ▾

Jun 20



Actions on Google

OPEN CONSOLE

SEO Quiz was a

Congratulations, version  
being deployed to Prod

the process of



# Recommendation Models Are Evolving

The Netflix logo, consisting of the word "NETFLIX" in white, bold, sans-serif capital letters, centered on a solid red rectangular background.

**NETFLIX**

# Google Keyword Planner's Dirty Secrets

By [rjonesx.](#)

[View Post](#)

Published to Main Blog Dec 1st 2015, 00:19

Published Post

Discussion

Idea

History

Guidelines

Select a Category (required)

Category 2 (optional)

Category 3 (optional)

Keyword Research

Advanced SEO

Link Building

Title your Post

Google Keyword Planner's Dirty Secrets

Post URL

<https://moz.com/blog/google-keyword-planner-dirty-secrets>

Write Blog Post:

Sometimes our best data sources aren't exactly perfect. While nearly every search marketer will rely on [Google Keyword Planner](#) data at one point or another, especially while doing keyword research, the reality is that the data is often untrustworthy and should be viewed with great skepticism. Whether you plan to use it to help build a paid search campaign or determine which content to write, there are huge caveats to the numbers

!?

## Google Keyword Planner's Dirty Secrets

By [rjonesx.](#)

[View Post](#)

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## Discussion

### Idea

## History

## Guidelines

Select a Category (required)

Category 2 (optional)

Category 3 (optional)

### Keyword Research

## Advanced SEO

## Link Building

## Title your Post

## Google Keyword Planner's Dirty Secrets

Post URL

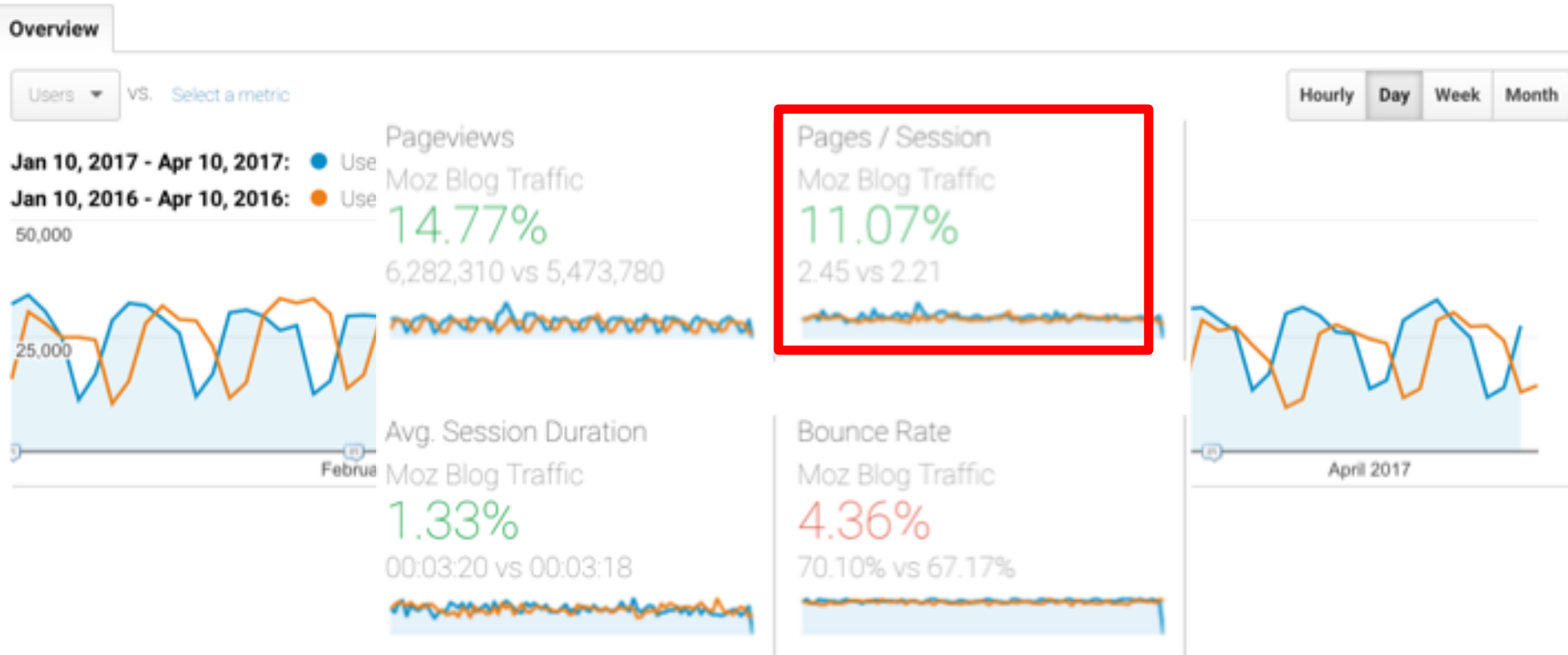
<https://moz.com/blog/google-keyword-planner-dirty-secrets>

Write Blog Post:

Sometimes our best data sources aren't exactly apples to apples. While nearly every search marketer will rely on [Google Keyword Planner](#) data at one point or another, especially while doing keyword research, the reality is that the data is often untrustworthy and should be viewed with great skepticism. Whether you plan to use it to help build a paid search campaign or determine which content to write, there are huge caveats to the numbers.



# Pages per session went up 11.07% YoY



# Help visitors stick around & get more value

## Testing Page Recommender

Not bad for out of the box!

```
[4] import Algorithmia
```

```
input = [  
    "https://www.geekwire.com/2018/israels-spaceil-team-says-spacex-will-launch-lunar-lander-year/",  
    "731509d0bcf645c6b16b5927645d641e",  
    12  
]  
client = Algorithmia.client('simzJtrJHl+D6SkIH3TI9cABU+w1')  
algo = client.algo('web/WebPageRecommender/0.1.40')  
print(algo.pipe(input))
```

```
↳ AlgoResponse(result={u'recs': [{u'url': u'http://www.geekwire.com/2015/the-unicorn-list-there-are-now-131-startups'}]})
```

# Help visitors stick around & get more value

## Testing Page Recommender

Not bad for out of the box!

```
[4] import Algorithmia

input = [
    "https://www.geekwire.com/2018/israels-sp",
    "731509d0bcf645c6b16b5927645d641e",
    12
]
client = Algorithmia.client('simzJtrJHl+D68')
algo = client.algo('web/WebPageRecommender')
print(algo.pipe(input))
```

```
↳ AlgoResponse(result={u'recs': [{u'url':
```



# Cycling vs. Serpentine

## Testing Page Recommender

Not bad for out of the box!

```
[4] import Algorithmia

input = [
    "https://www.geekwire.com/2018/israels-sp",
    "731509d0bcf645c6b16b5927645d641e",
    12
]
client = Algorithmia.client('simzJtrJHl+D68')
algo = client.algo('web/WebPageRecommender/')
print(algo.pipe(input))
```

```
↳ AlgoResponse(result={u'recs': [{u'url':
```





# Writing Meta Descriptions Sucks







site:moz.com/community/q



All

Images

News

Shopping

Maps

More

Settings

Tools

Page 12 of about 42,000 results (0.23 seconds)

## Hyphens vs Underscores | Moz Q&A | Moz

<https://moz.com/community/q/hyphens-vs-underscores> ▼

Mar 5, 2012 - I am optimizing a site which uses underscores rather than hyphens as word separators (such\_as\_this.php vs. such-as-this.php). Most of these ...



site:moz.com/community/q



All

Images

News

Shopping

Maps

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Mar 5, 2012 - I am optimizing a site which uses underscores rather than hyphens as word separators (such\_as\_this.php vs. such-as-this.php). Most of these ...

<title>Hyphens vs Underscores | Moz Q&A | Moz</title>

<meta content="Have an SEO question? Search our Q&A forum for your question; if not found, please ask our incredible community of SEOs for some help! You can also earn MozPoints by answering other community members' questions." name="description">



# Summarizer

Advanced Content Summarizer

**20 Credit Royalty** API calls **79,423**

## Tags

keywords

nlp

summarization

text analysis

## Permissions

Algorithmia Platform License



## Hyphens vs Underscores

2

Mar 05, 2012 - Posted by [BluespaceCreative](#) in [Intermediate & Advanced SEO](#), [On-Page / Site Optimization](#), [Search Engine Trends](#), and [1 other topics](#)

★ ★ ★ ★ ★

15 Responses | 15478 Views

I am optimizing a site which uses underscores rather than hyphens as word separators (such\_as\_this.php vs. such-as-this.php). Most of these pages have been around since 2007, and I am hesitant to just redirect to a new page because I am worried it will cause the rankings to slip.

Would you recommend changing the file names to be in hyphenated format and place 301 redirects on the pages with underscores, or stick with the existing pages? Is there anything else that would work better?

Thanks!

[Edit Question](#)



[Share](#)

[+ Share](#)

[Tweet](#)

[in Share](#)

[Email Updates](#)

[+ Respond to Question](#)

## 15 Responses

[Oldest to Newest](#)

[Newest to Oldest](#)

[Most Helpful](#)

15 NEW



[donford](#)

Mar 05, 2012 | [Edit](#) | [0](#)

★ ★ ★ ★ ★

Hi Logan,

I was faced with the similar question a couple years ago when I started with my current company.

The short answer is no, do not change a url that is currently using underscores to hyphens if it is well indexed.

If you're making a new page, then you should probably use hyphens instead of underscores.

New



# ALGORITHMIA

## Run an Example

### INPUT


```
existing pages? Is there anything else that would work better?"
```

### OUTPUT

```
{  
  "worried":  
    "such-as-thi"  
  },  
  "summarized_data": "I am optimizing a site which uses  
underscores rather than hyphens as word separators  
such_as_this...The short answer is no, do not change a url  
that is currently using underscores to hyphens if it is well  
indexed..."  
}
```

**RUN EXAMPLE ►**



A photograph of a brown and grey speckled duck standing on a boat deck. The duck is looking to the right. In the background, there are boat railings and a wooden deck. A grey semi-transparent box is overlaid on the top left of the image.

# Can you believe?!

## Hyphens vs Underscores | Moz Q&A | Moz

[moz.com/community/q/hyphens-vs-underscores](https://moz.com/community/q/hyphens-vs-underscores) ▼

I am optimizing a site which uses underscores rather than hyphens as word separators such\_as\_this...The short answer is no, do not change a url that is currently

## Hyphens vs Underscores | Moz Q&A | Moz

<https://moz.com/community/q/hyphens-vs-underscores> ▼

Mar 5, 2012 - I am optimizing a site which uses underscores rather than hyphens as word separators (such\_as\_this.php vs. such-as-this.php). Most of these ...

**@jroaks**



**JR Oaks**

Hacker, Technical SEO, NC State  
fan, co-organizer  
Of Raleigh & RTP Meetups, as well  
as Search Engine Land author

[codeseo.io](http://codeseo.io)

**@GraysonParks**



**Grayson Parks**

Writer, programmer, constant learner.  
Digital marketer, husband, golden  
retriever owner. Words and data are my  
Passions. #SEO @AdaptPartners

[GraysonParks.com](http://GraysonParks.com)



## Auto-generated Descriptions



File Edit View Insert Format Data Tools Add-ons Help Last edit was made 10 minutes ago by anonymous



fx \*pageDescription(A2, 300)

	A	B
1	URLs	Generated Description
2	<a href="https://moz.com/">https://moz.com/</a>	
3	<a href="https://moz.com/about">https://moz.com/about</a>	
4	<a href="https://moz.com/gdp">https://moz.com/gdp</a>	
5	<a href="https://moz.com/ugc">https://moz.com/ugc</a>	
6	<a href="https://moz.com/top500">https://moz.com/top500</a>	
7	<a href="https://moz.com/blog">https://moz.com/blog</a>	
8	<a href="https://moz.com/local">https://moz.com/local</a>	
9	<a href="https://moz.com/mozcast/">https://moz.com/mozcast/</a>	
10	<a href="https://moz.com/community">https://moz.com/community</a>	
11	<a href="https://moz.com/mozcon">https://moz.com/mozcon</a>	
12	<a href="https://moz.com/and">https://moz.com/and</a>	
13	<a href="https://health.moz.com/">https://health.moz.com/</a>	
14	<a href="https://moz.com/training">https://moz.com/training</a>	
15	<a href="https://moz.com/devblog/">https://moz.com/devblog/</a>	
16	<a href="https://moz.com/realthrough">https://moz.com/realthrough</a>	
17	<a href="https://moz.com/moztop10">https://moz.com/moztop10</a>	
18	<a href="https://moz.com/academy">https://moz.com/academy</a>	
19	<a href="https://moz.com/help">https://moz.com/help</a>	
20	<a href="https://moz.com/explorer">https://moz.com/explorer</a>	
21	<a href="https://moz.com/subscriptions">https://moz.com/subscriptions</a>	
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		

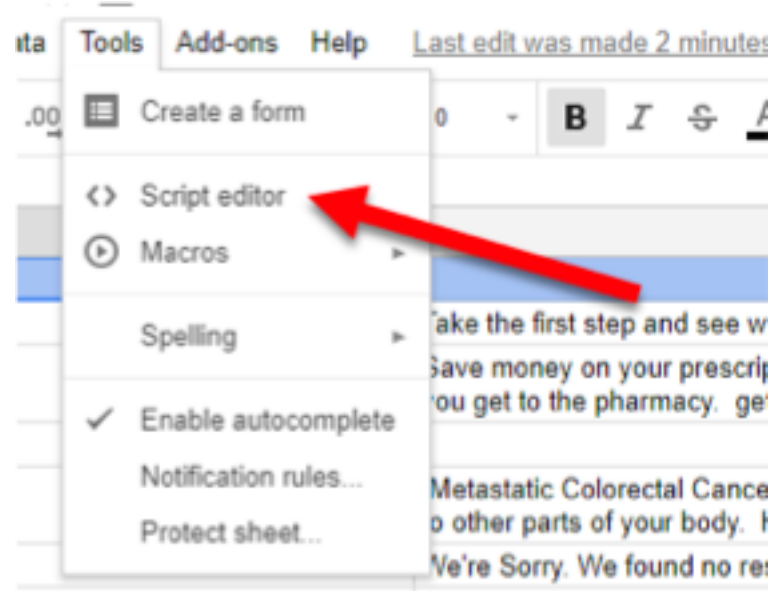
# Find a developer familiar with AWS to:

1. Assist with deploying [AWS Lambda](#). --Several steps will affect the cost & security.
2. Extract the content of the webpage using the library [Goose3](#) (a Python library w/BeautifulSoup).
3. Summarize the content using summa (or another summarizing library/model)
4. Create a Lambda Function.
  - a. Package the files for AWS Lambda & install the dependencies (in this case Goose3 and summa, etc) into a folder along with what is called a handler file. The handler file is what Lambda calls to run your script.
  - b. Here is the packaged Lambda function (including the dependencies):  
[https://s3.amazonaws.com/ap-lambda-functions/meta\\_summa.zip](https://s3.amazonaws.com/ap-lambda-functions/meta_summa.zip)
5. Once the zip file is deployed to AWS as a Lambda function, you should get a URL to access the API that looks like:  
[https://XXXXXXXX.execute-api.us-east-1.amazonaws.com/v1/ap\\_meta\\_descriptions](https://XXXXXXXX.execute-api.us-east-1.amazonaws.com/v1/ap_meta_descriptions)

# Copy & Paste like a badass in GSheets!

=pageDescription(A2, 150)

```
function pageDescription(url, length) {  
  if (typeof length == 'undefined' || !length || length < 1){  
    var endpoint = 'https://XXXXXXXXX.execute-api.us-east-1.amazonaws.com/v1/ap_meta_descriptions?url=' + url;  
  }else{  
    var endpoint = 'https://XXXXXXXXX.execute-api.us-east-1.amazonaws.com/v1/ap_meta_descriptions?url=' + url + "&len=" + length;  
  }  
  
  var response = UrlFetchApp.fetch(endpoint);  
  var text = response.getContentText();  
  
  var data = JSON.parse(text);  
  
  if (data){  
    return data.meta_description  
  }  
}
```







### Auto-generated Descriptions



File Edit View Insert Format Data Tools Add-ons Help Last edit was made 10 minutes ago by anonymous

Last edit was made 10 minutes ago by anonymous



```
fX = pageDescription(A2, 300)
```

	A	B
1	URLs	Generated Description
2	<a href="https://moz.com/">https://moz.com/</a>	
3	<a href="https://moz.com/about">https://moz.com/about</a>	
4	<a href="https://moz.com/gdpr">https://moz.com/gdpr</a>	
5	<a href="https://moz.com/ugc">https://moz.com/ugc</a>	
6	<a href="https://moz.com/top500">https://moz.com/top500</a>	
7	<a href="https://moz.com/blog">https://moz.com/blog</a>	
8	<a href="https://moz.com/local">https://moz.com/local</a>	
9	<a href="https://moz.com/mozcast/">https://moz.com/mozcast/</a>	
10	<a href="https://moz.com/community">https://moz.com/community</a>	
11	<a href="https://moz.com/mozcon">https://moz.com/mozcon</a>	
12	<a href="https://moz.com/rand">https://moz.com/rand</a>	
13	<a href="https://health.moz.com/">https://health.moz.com/</a>	
14	<a href="https://moz.com/training">https://moz.com/training</a>	
15	<a href="https://moz.com/devblog/">https://moz.com/devblog/</a>	
16	<a href="https://moz.com/walkthrough">https://moz.com/walkthrough</a>	
17	<a href="https://moz.com/moztop10">https://moz.com/moztop10</a>	
18	<a href="https://moz.com/academy">https://moz.com/academy</a>	
19	<a href="https://moz.com/help">https://moz.com/help</a>	
20	<a href="https://moz.com/explorer">https://moz.com/explorer</a>	
21	<a href="https://moz.com/subscriptions">https://moz.com/subscriptions</a>	
22		
23		




## Auto-generated Descriptions



File Edit View Insert Format Data Tools Add-ons Help Last edit was made 10 minutes ago by anonymous



=pageDescription(A2, 300)

	A	B
1	URLs	Generated Description
2	<a href="https://moz.com/">https://moz.com/</a>	
3	<a href="https://moz.com/about">https://moz.com/about</a>	
4	<a href="https://moz.com/gdpr">https://moz.com/gdpr</a>	
5	<a href="https://moz.com/ugc">https://moz.com/ugc</a>	
6	<a href="https://moz.com/top500">https://moz.com/top500</a>	
7	<a href="https://moz.com/blog">https://moz.com/blog</a>	
8	<a href="https://moz.com/local">https://moz.com/local</a>	
9	<a href="https://moz.com/mozcast/">https://moz.com/mozcast/</a>	
10	<a href="https://moz.com/community">https://moz.com/community</a>	
11	<a href="https://moz.com/mozcon">https://moz.com/mozcon</a>	
12	<a href="https://moz.com/rand">https://moz.com/rand</a>	
13	<a href="https://health.moz.com/">https://health.moz.com/</a>	
14	<a href="https://moz.com/training">https://moz.com/training</a>	
15	<a href="https://moz.com/devblog/">https://moz.com/devblog/</a>	
16	<a href="https://moz.com/walkthrough">https://moz.com/walkthrough</a>	
17	<a href="https://moz.com/moztop10">https://moz.com/moztop10</a>	
18	<a href="https://moz.com/academy">https://moz.com/academy</a>	
19	<a href="https://moz.com/help">https://moz.com/help</a>	
20	<a href="https://moz.com/explorer">https://moz.com/explorer</a>	
21	<a href="https://moz.com/subscriptions">https://moz.com/subscriptions</a>	
22		
23		

# Reducing the time it takes to write meta descriptions for large websites

The process of writing meta descriptions will likely be improved using machine learning techniques, but in the meantime, contributor Paul Shapiro shares ways to semi-automate writing meta descriptions.

Paul Shapiro on June 13, 2018 at 11:43 am

[Use Text Summarization Algorithms to Help Aid the Writing of Meta Descriptions](#) (GitHub Repo)

# Other SEO Opportunities with Machine Learning:

Finding ranking opportunities

Title tag optimization

Keyword opportunity gaps

Client reports

Finding common question opportunities

Content creation

Log file analysis

Ranking predictions

Site crawl opportunities

GSC data analysis

Rich customer understanding

Traffic predictions

Ranking factor probabilities

User engagement

1. What is Machine Learning & why you should care?

2. How can you apply ML to SEO?

**3. Tools & Resources**



## How to build your first ML model:

1. Collect & clean dataset ← *Most of the work*
2. Build your model ← *A few lines of code*
3. Train ← *One line*
4. Evaluate ← *One line*
5. Predict ← *One line*





# Welcome to Codelabs!

Google Developers Codelabs provide a guided, tutorial, hands-on coding experience. Most codelabs will step you through the process of building a small application, or adding a new feature to an existing application. They cover a wide range of topics such as Android Wear, Google Compute Engine, Project Tango, and Google APIs on iOS.

[VIEW EVENTS](#)[A-Z](#) [RECENT](#) [DURATION](#)

Category



213 min

End-to-end Machine Learning with  
Tensorflow on GCP

[START](#)

Updated Jun 9, 2018



20 min

Identify objects in images using  
custom machine learning models with  
ML Kit for Firebase

[START](#)gkal  
Updated May 9, 2018

25 min

Integrating Machine Learning APIs

[START](#)torryyang  
Updated Jun 21, 2018



## Introduction

Prerequisites and Prework

## ML Concepts

**Introduction to ML (3 min)**

- › Framing (15 min)
- › Descending into ML (20 min)
- › Reducing Loss (60 min)
- › First Steps with TF (60 min)
- › Generalization (15 min)
- › Training and Test Sets (25 min)
- › Validation (40 min)
- › Representation (65 min)
- › Feature Crosses (70 min)
- › Regularization: Simplicity (40 min)
- › Logistic Regression (20 min)
- › Classification (90 min)
- › Regularization: Sparsity (45 min)
- › Introduction to Neural Nets (55 min)
- › Training Neural Nets (40 min)

# Introduction to Machine Learning



This module introduces Machine Learning (ML).

**Estimated Time:** 3 minutes**Learning Objectives**

- Recognize the practical benefits of mastering machine learning
- Understand the philosophy behind machine learning



Get Started

## Beginners

[Get Started with Eager Execution](#)[Get Started with Graph Execution](#)[Premade Estimators](#)

## Estimators

[For Beginners](#)[Premade Estimators](#)[Checkpoints](#)[Feature Columns](#)[Datasets Quick Start](#)[Creating Custom Estimators](#)[TensorFlow Versions](#)

# Get Started with Eager Execution

[Run in Google Colab](#)[View source on GitHub](#)

This tutorial describes how to use machine learning to **categorize** Iris flowers by species. It uses [TensorFlow's](#) eager execution to (1) build a **model**, (2) **train** the model on example data, and (3) use the model to make **predictions** on unknown data. Machine learning experience isn't required to follow this guide, but you'll need to read some Python code.

## TensorFlow programming

There are many [TensorFlow APIs](#) available, but we recommend starting with these high-level TensorFlow concepts:

- Enable an [eager execution](#) development environment,
- Import data with the [Datasets API](#),
- Build models and layers with TensorFlow's [Keras API](#).



Hello, Colaboratory



File Edit View Insert Runtime Tools Help

GO SHARE



CODE TEXT CELL CELL COPY TO DRIVE

✓ CONNECTED

EDITING

Table of contents

Code snippets



## Welcome to Colaboratory!

Local runtime support

Python 3

TensorFlow execution

Visualization

Forms

Examples

For more information:

SECTION

## Welcome to Colaboratory!

Colaboratory is a Google research project created to help disseminate machine learning education and research. It's a Jupyter notebook environment that requires no setup to use and runs entirely in the cloud.

Colaboratory notebooks are stored in [Google Drive](#) and can be shared just as you would with Google Docs or Sheets. Colaboratory is free to use.

For more information, see our [FAQ](#).

## Local runtime support

Colab also supports connecting to a Jupyter runtime on your local machine. For more information, see our [documentation](#).

### Python 3

Colaboratory supports both Python2 and Python3 for code execution.

- When creating a new notebook, you'll have the choice between Python 2 and Python 3.
- You can also change the language associated with a notebook; this information will be written into the `.ipynb` file itself, and thus will be preserved for future sessions.

```
[ ] import sys
print('Hello, Colaboratory from Python {}'.format(sys.version_info[0]))
```

Hello, Colaboratory from Python 3!

### TensorFlow execution



CODE TEXT

CELL CELL

COPY TO DRIVE

CONNECT

EDITING



Table of contents

Code snippets



Wireframe Plots

## Charting in Colaboratory

Matplotlib

Line Plots

Bar Plots

Histograms

Scatter Plots

Stack Plots

Pie Charts

fill\_between and alpha

Subplotting using Subplot2grid

Plot styles

3D Graphs

3D Scatter Plots

3D Bar Plots

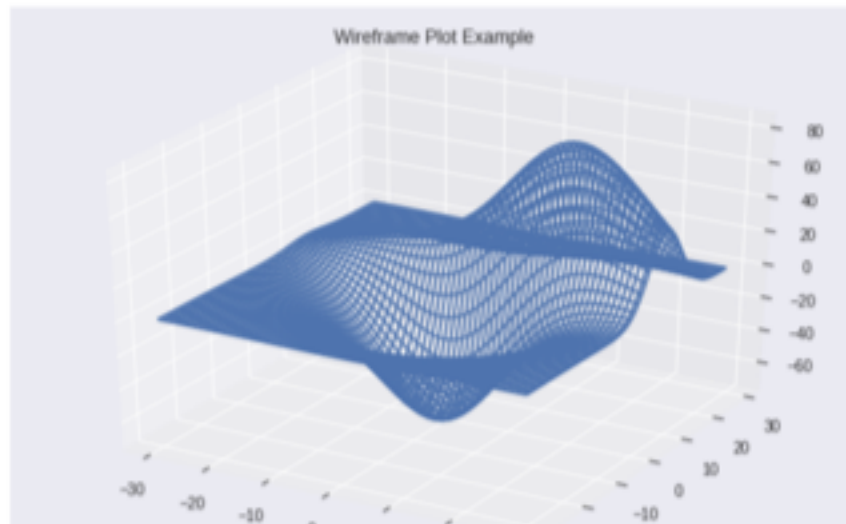
```
[ ] import matplotlib.pyplot as plt

fig = plt.figure()
ax = fig.add_subplot(111, projection = '3d')

x, y, z = axes3d.get_test_data()

ax.plot_wireframe(x, y, z, rstride = 2, cstride = 2)

plt.title("Wireframe Plot Example")
plt.tight_layout()
plt.show()
```



# Competitions

[Documentation](#)[InClass](#)

General

InClass

Sort by

Grouped



All Categories



Search competitions



18 Active Competitions



## Spooky Author Identification

Share code and discuss insights to identify horror authors from their writings

[Playground](#) · 7 months ago · 📁 literature, linguistics, multiclass classification

\$25,000

1,244 teams



## Passenger Screening Algorithm Challenge

Improve the accuracy of the Department of Homeland Security's threat recognition algorithms

**Featured** · 7 months ago · 📁 terrorism, image data, object detection

\$1,500,000

518 teams



# Competitions

[Documentation](#)[InClass](#)

General

InClass

Sort by

Grouped



All Categories



Search competitions



18 Active Competitions



## Quora Question Pairs

Can you identify question pairs that have the same intent?

**Featured** · a year ago · 🏷️ linguistics, internet, tabular data, text data, duplicate detection

\$25,000

3,307 teams



Google Cloud Platform

## Google Cloud & YouTube-8M Video Understanding Challenge

Can you produce the best video tag predictions?

**Featured** · a year ago · 🏷️ internet, image data, object labeling

\$100,000

655 teams

# CPU > GPU > TPU

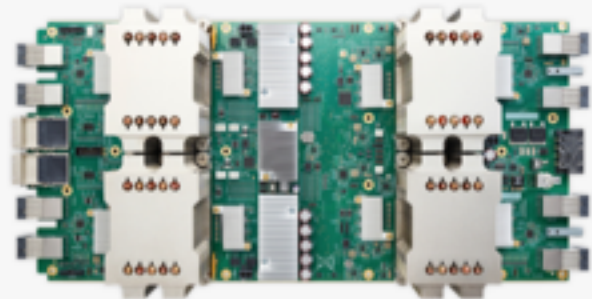
## CLOUD TPU

Train and run machine learning models faster than ever before

[VIEW DOCUMENTATION](#)[GET STARTED](#)

## Accelerated Machine Learning

Machine learning (ML) has the power to greatly simplify our lives. Improvements in computer vision and natural language processing help all of us interact more naturally with technology. Businesses rely on ML to strengthen network security and reduce fraud. Advances in medical imaging enabled by ML can increase the accuracy of medical diagnoses and expand access to care, ultimately saving lives.



# Getting Started Resources

[Google's Machine Learning Crash Course](#)

[Google Code Labs](#)

[Colab Notebooks](#)

[Learn With Google AI](#)

[Image-net.org](#)

[Kaggle](#)

# Advanced Resources

[Yearning Learning](#) (free book preview by Andre Ng)

[Neural Networks & Deep Learning](#)

[Correlation vs Causation](#) (by Dr. Pete!)

[Exploring Word2Vec](#)

[The Zipf Mystery](#)

[BigML](#)

[Targeting Broad Queries in Search](#)

[Project Mosaic Books](#)

[How to eliminate bias in data driven marketing](#)

[TensorFlow Dev Summit 2018 \[videos\]](#)

[NLP Sentiment Analysis](#)

[Talk 2 Books](#)

[Image-Net](#)

[The Shallowness of Google Translate](#)

[TF-IDF](#)

[LSI](#)

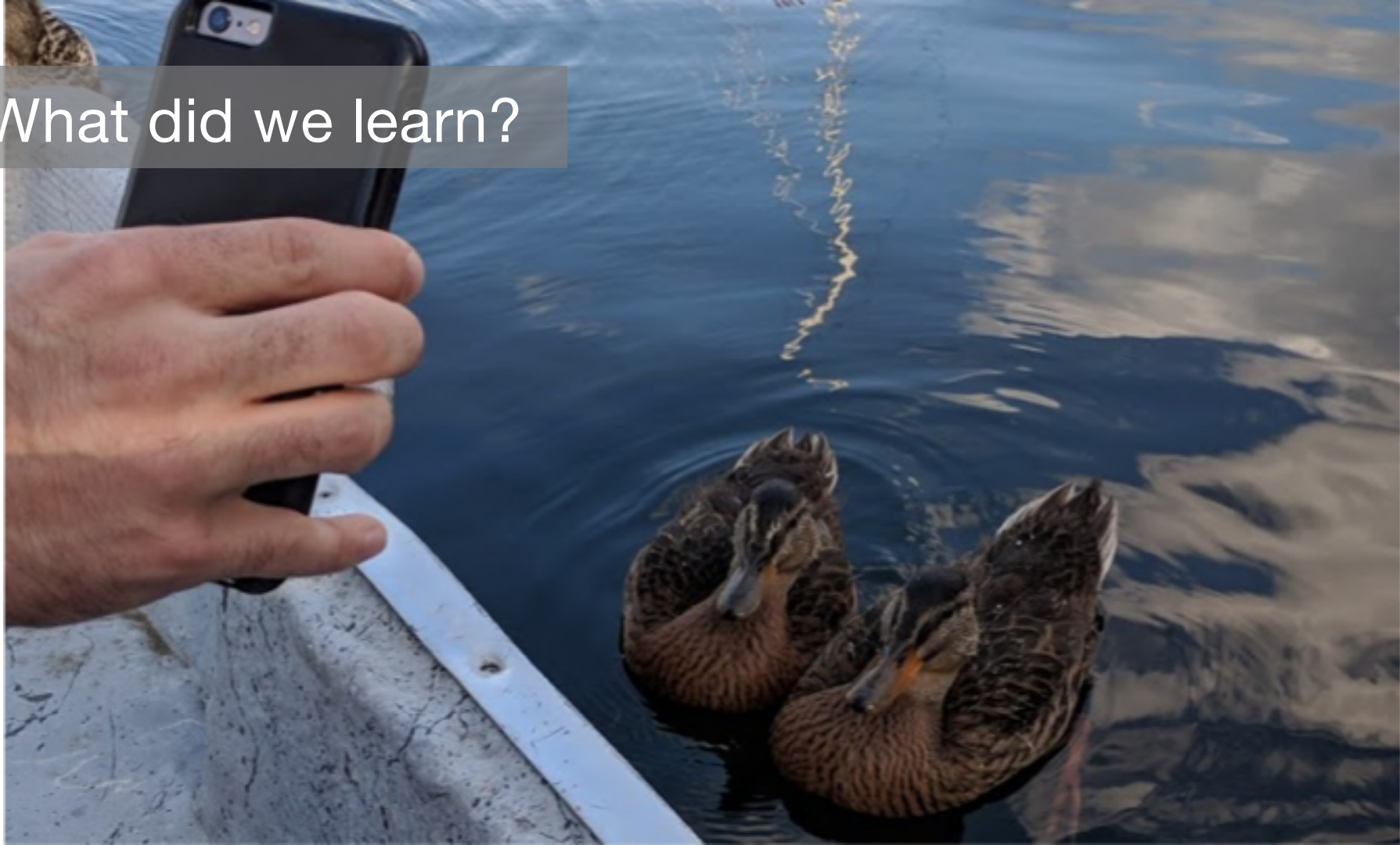
[LDA](#)

[Learn Python](#)

[Massive Open Online Courses](#)

[Coursera Machine Learning](#)

What did we learn?



# What did we learn?

- Machine Learning combines statistics & programming
- A model is only as good as its training data
- The loss function helps us improve models, but overfitting should be avoided.
- YOU can create a ML model today!!!
- ML will help scale SEO tasks & allow us to evolve as SEOs







I lost it...







# Thank you!



@BritneyMuller



britney@moz.com

## Competitions

[Documentation](#)[InClass](#)

General

InClass

Sort by

Grouped



All Categories



Search competitions



18 Active Competitions

**Quora Question Pairs**

Can you identify question pairs that are related?

Featured · a year ago · 🏷️ linguistics

\$25,000

3,307 teams

Netflix Recommendation



Google Cloud Platform

**Google Cloud & YouTube Video Classification**

Can you produce the best video classification model?

Featured · a year ago · 🏷️ internet, image data, object labeling

\$100,000

655 teams

NETFLIX



## Analyze Twitter Accounts

Sentiment analysis is kind of hit or miss



&



ALGORITHMIA

```
[4] import Algorithmia

input = {
    "query": "randfish",
    "auth": {
        "app_key": "YAu48ViD52zgOy45xlgWfx2iV",
        "app_secret": "1lwQEj9G5XvHEmlPmjXnTJbpqXgI8TPB8pHHRZB0Ht8lINkkwc",
        "oauth_token": "21446729-TKwjs1SWgamQPzjB59H8oF7J5F4GSAOn3FFt0haGA",
        "oauth_token_secret": "1AAwExTx1bWOP9LyNQhOQaTrANvIii3RbQPF8qq585ix0"
    }
}

client = Algorithmia.client('simzJtrJHl+D6Sk1H3TI9cABU+w1')
algo = client.algo('diego/AnalyzeTwitterUser/0.1.6')
print(algo.pipe(input))
```

u'is negative about': [{u'tmwhiskeywoman': 1, u'stressful': 1, u'believer': 1, u'hear': 1, u'struggle': 1, u'awful': 1, u'disconnect': 1, u'retweetis

## Analyze Twitter Accounts

Sentiment analysis is kind of hit or miss

```
[4] import Algorithmia

input = {
    "query": "randfish",
    "auth": {
        "app_key": "YAu48ViD52zgOy45xlgWfx2iV",
        "app_secret": "1lwQEj9G5XvHEmlPmjXnTJbpqXgI8TPB8pHHRZB0Ht8lINkkwc",
        "oauth_token": "21446729-TKwjs1SWgamQPzjB59H8oF7J5F4GSAOn3FFt0haGA",
        "oauth_token_secret": "1AAwExTx1bWOP9LyNQhOQaTrANvIii3RbQPF8qq585ix0"
    }
}

client = Algorithmia.client('simzJtrJHl+D6Sk1H3TI9cABU+w1')
algo = client.algo('diego/AnalyzeTwitterUser/0.1.6')
print(algo.pipe(input))
```

is positive about': [{u'account': 2, u'caseyhen': 3, u'links': 2, u'agreed': 2, u'quiz': 2, u'wilreynolds': 2, u'super': 2}, {u'company': 2, u'googl

# Testing Algorithmia's image recognition model

Not bad for out of the box!

```
import Algorithmia

input = "http://i.imgur.com/edw6fHB.jpg"
client = Algorithmia.client('simzJtrJHl+D6Sk1H3TI9cABU+w1')
algo = client.algo('PetiteProgrammer/ImageClassifier/0.2.1')
print(algo.pipe(input))
```

```
{ 'class': u'bolo_tie'}, {u'confidence': 0.024870457127690315, u'class': u'curly-coated_retriever'},
```

```
{u'confidence': 0.07712080329656601, u'class': u'Kerry_blue_terrier'}
```

```
{u'confidence': 0.0453086718916893, u'class': u'wool'}
```

```
{u'confidence': 0.0443725511431694, u'class': u'Irish_water_spaniel'}
```

```
{u'confidence': 0.039072223007678986, u'class': u'Bouvier_des_Flandres'}
```

```
{u'confidence': 0.035601016134023666, u'class': u'knot'}
```

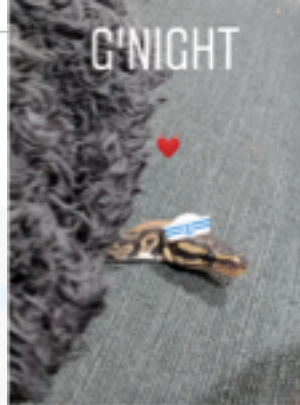
```
{u'confidence': 0.02956104278564453, u'class': u'bolo_tie'}
```

```
{u'confidence': 0.024870457127690315, u'class': u'curly-coated_retriever'}
```

```
{u'confidence': 0.024357935413718224, u'class': u'standard_poodle'}
```

```
{u'confidence': 0.019826509058475494, u'class': u'chain'}
```

```
{u'confidence': 0.01976911723613739, u'class': u'safety_pin'}
```



*“One of the major promises of AI is freeing people from mindless tasks, so they can do more meaningful work.”*

-SAM DEBRULE

SCI-TECH

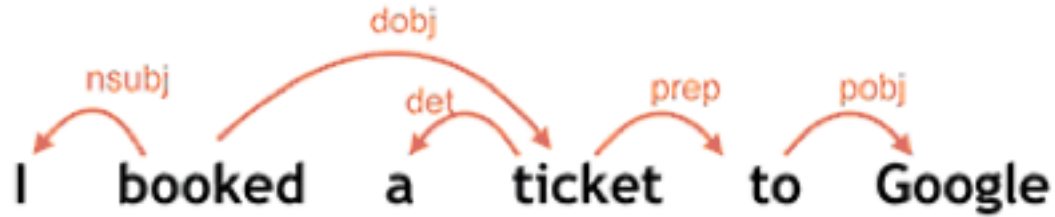
# Don't laugh: Google's Parsey McParseface is a serious IQ boost for computers

Google offers free use of SyntaxNet technology, a boon to anyone trying to get computers to understand natural human language.

BY **STEPHEN SHANKLAND** / MAY 13, 2016 3:25 AM PDT

# Parcey McParseface

## Dependency Parsing





```
input = {  
  "src": "My hope today is to plant a seed of Machine Learning within each and every one of you. You hold the power to create t  
  "format": "tree",  
  "language": "english"  
}  
client = Algorithmia.client('simzJtrJHl+D6Sk1H3TI9cABU+w1')  
algo = client.algo('deeplearning/Parsey/1.1.0')  
print(algo.pipe(input))
```

↳ AlgoResponse(result=Input: My hope today is to plant a seed of Machine Learning within each and every one of you.

Parse:

is VERB++VBZ ROOT

+-- hope NOUN++NN nsubj

| +-- My PRON++PRP\$ nmod:poss

+-- today NOUN++NN nmod:tmod

+-- plant VERB++VB ccomp

+-- to PART++TO mark

+-- seed NOUN++NN dobj

| +-- a DET++DT det

| +-- Learning VERB++VBG nmod

| +-- of ADP++IN case

| +-- Machine NOUN++NN compound

+-- each DET++DT nmod

+-- within ADP++IN case

+-- and CONJ++CC cc

+-- one NOUN++NN conj

+-- every DET++DT det

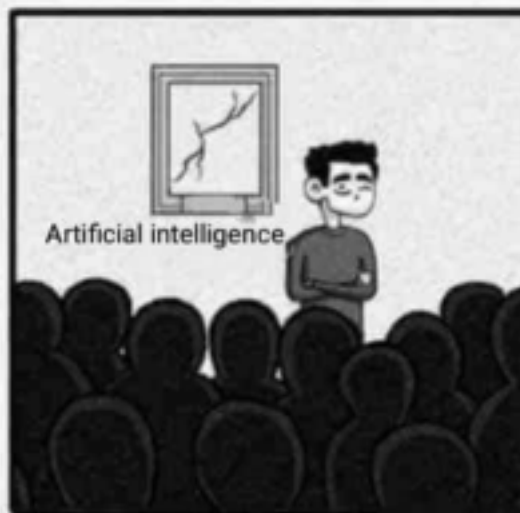
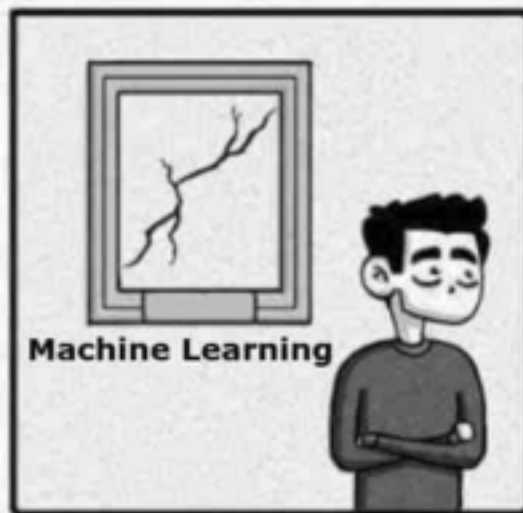
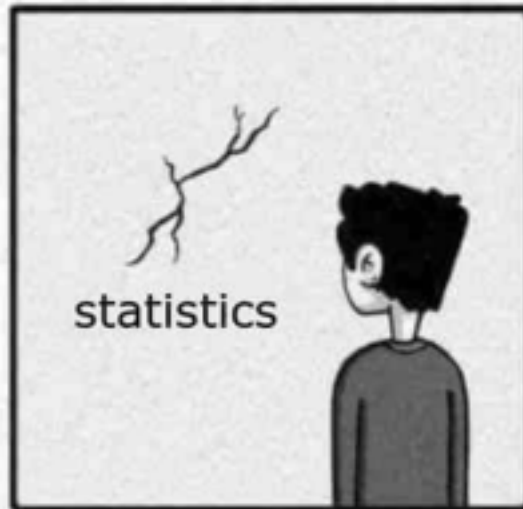
+-- you. PUNCT++ . nmod

+-- of ADP++IN case

Input: You hold the power to create the next cutting edge machine learning applications.

Parse:





We've just launched a new contribution experience

[TAKE A LOOK](#)

[Help report bugs >](#)

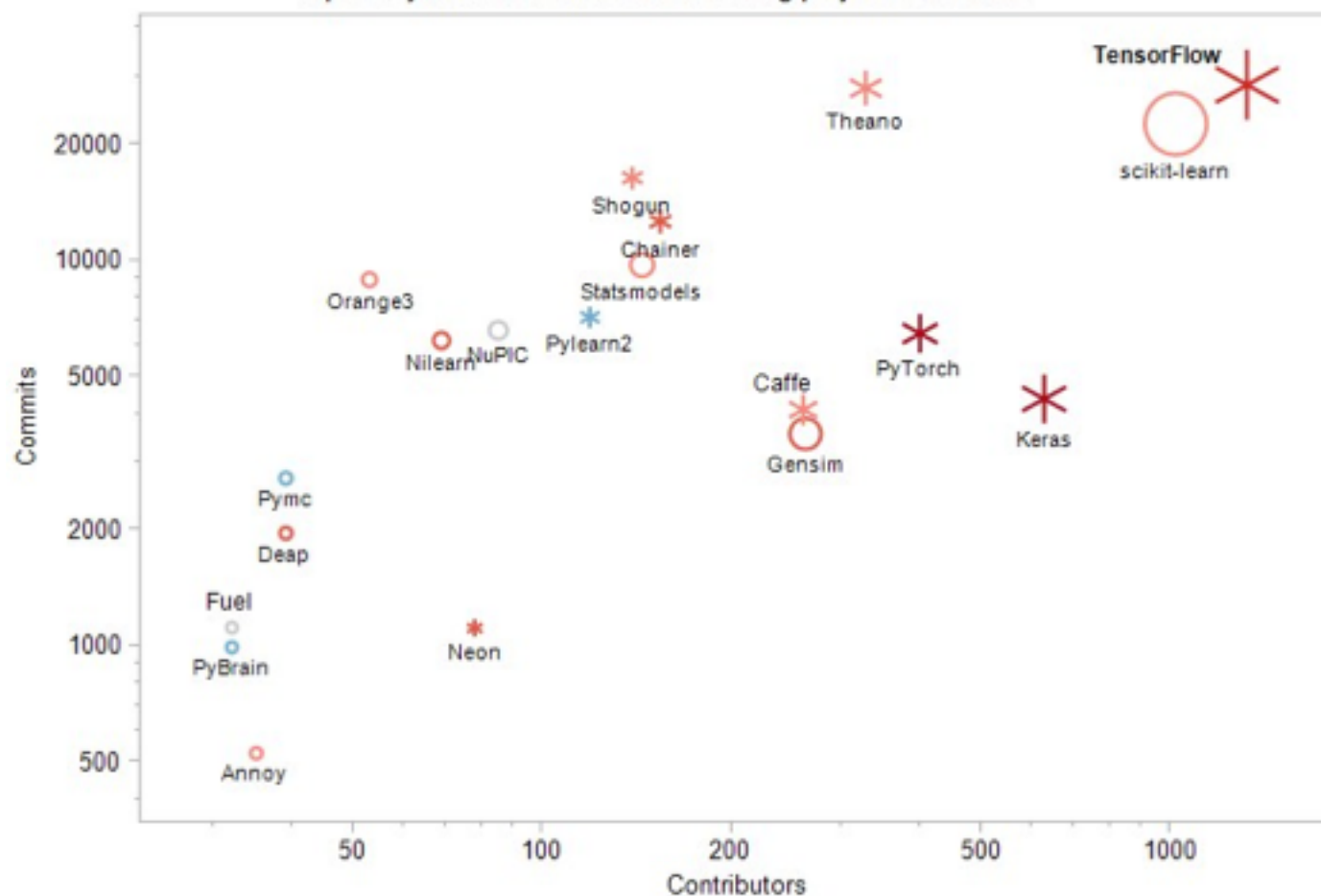
The Common Voice project is Mozilla's initiative to help teach machines how real people speak.



Speak up, contribute here!

[voice.mozilla.org](https://voice.mozilla.org)

Top 20 Python AI and Machine Learning projects on Github



# MACHINE INTELLIGENCE 3.0

## ENTERPRISE INTELLIGENCE

<b>VISUAL</b> Orin Insight, Clarifai, Cognition, Cortica, Expert Labs, SPACI KNOW, Netra, deepomatic	<b>AUDIO</b> Gridspace, TalkIQ, Nexidia, Twilio, CAPIO, Expert Labs, Clever, QuirkyAI, paycom	<b>SENSOR</b> PREDIX, Cytot, MANTA, Sentient, PLANET OS, Lantana, IBM, Redshift, Thingiverse, Xerox, Alivum	<b>INTERNAL DATA</b> Invenio, IBM Watson, Qeep, Palantir, ADAM, Watson, Sapho, Qylix, Digital Processing	<b>MARKET</b> Mattermark, Quid, Datafiniti, Premise, Bottomline, Motika, Enigma, C360, C360, C360, C360, C360, C360
---	--	--	---	--

## ENTERPRISE FUNCTIONS

<b>CUSTOMER SUPPORT</b> DigitalGenius, Kasisto, Eloquent, Wavio, ACTION, Zendesk, Proact, CLARABRIDGE	<b>SALES</b> collective, sense, fuse/machines, AVISO, salesforce, inside sales, clari, Zengix, Zengix	<b>MARKETING</b> Hootsuite, Lattice, Radius, Lattice, (PERSADO), Brightline, Refinery, Cognicon, Aupha, Inq	<b>SECURITY</b> CYCLANCE, Backtrace, Zimperium, dependent, Sentinel, Graphistry, drawbridge, Signifiance, AppView	<b>RECRUITING</b> textio, cratelo, Wide & Wendy, hi, univis, SpringRole, GIGSTER, flow
--	--	--	--	---

## AUTONOMOUS SYSTEMS

<b>GROUND NAVIGATION</b> drive.ai, AutoWorks, ZOOX, Alcon, Uber, Google, Tesla, Delphi, Auto Robotics	<b>AERIAL</b> Skydio, Shield AI, Airware, DJI, Lily, DroneDeploy, pylon, SkyCatcher	<b>INDUSTRIAL</b> Jaybridge, OSARO, CLEARPATH, fetch, KINORE, nvidia robotics, HIRBERT	<b>PERSONAL</b> Amazon, Alexa, Cortana, Allo, Facebook, Siri, Repika	<b>AGENTS</b> Professional, Butter.ai, PGO, SKIFFLAG, clara, x.ai, slack, tala, Zoom, sudo
--	--	---	---	---

## INDUSTRIES

<b>AGRICULTURE</b> BLUE DRIVER, MIVT, tute, TRACE, P, Stride, AGRI DATA, Precision, L, Reddy	<b>EDUCATION</b> KNEWTON, volley, gradescope, CTI, COURSE, UMACITY, school	<b>INVESTMENT</b> Bloomberg, Sentient, SENTIUM, KENSHO, alpha, Databricks, Quant	<b>LEGAL</b> blue J, BEAGLE, Everlaw, RAVEL, Seal, ROSS, LEGAL ROBOT	<b>LOGISTICS</b> MAUTO, Aeria, PHRECKT, Routific, clearmetal, MARBLE, PITSTOP
---	---	---	---	--

## INDUSTRIES CONT'D

<b>MATERIALS</b> Zymergen, Orin, Eiger Innovations, BRIGHT MACHINE, BRIGHT MACHINE, BRIGHT MACHINE, CALCULABO	<b>RETAIL FINANCE</b> TALA, finance, Lendo, earned, Affirm, MIBRADOR, wealthfront, Betterment	<b>PATIENT</b> PULSE, CareGrove, ZEPHYRUS HEALTH, ZEPHYRUS HEALTH, Cric, ZEPHYRUS, Atomix, Numerate	<b>IMAGE</b> BUTTER, SCAN, ARTERYS, enlitic, BAYLABS, Image, Google DeepMind	<b>BIOLOGICAL</b> CarbonX, color, GRAIL, deep genomics, RECURSION, LUMINIST, Numerate, Atomix, verily, T7501
--	--	--	---	---

## TECHNOLOGY STACK

**AGENT ENABLERS**  
 OCTANE.AI, howdy, Malub, KITTY.AI, OpenAI Gym, Kasisto, AUTOMAT, semantic machines

**DATA SCIENCE**  
 DOMINO, SPARK, beyond, rapidminer, kaggle, DataRobot, yhat, AYASDI, dataiku, seldon, yseop, big

**MACHINE LEARNING**  
 CognitiveScale, GoogleML, accend, relevant, Qeep, HyperScience, NOCOPS, mindful, H2O, SCALED INFERENCE, sparkcognition, loop, CRYSTAL BALLS, deepsense.io, reactive, skymind, bonsai

**NATURAL LANGUAGE**  
 opolo, PYLIE, LEXALYTICS, Narrative Science, spaCy, LUMINO, cortico.io, MonkeyLearn

**DEVELOPMENT**  
 SIGOPT, HyperOpt, fuzzy, pkite, rainforest, lobe, Anodot, Signifai, LAYER, bonsai

**DATA CAPTURE**  
 CrowdFlower, diffbot, CrowdAI, Import, Pexels, DATAST, amazon, mechanical turk, enigma, Workfusion, DATAST, TRIFACTA, parsehub

**OPEN SOURCE LIBRARIES**  
 Keras, Chainer, CNTK, TensorFlow, Caffe, H2O, DEEPLARNING4J, theano, torch, DSSTNE, Scikit-learn, AzureML, neon, MXNet, DMTK, Spark, PaddlePaddle, WEKA

**HARDWARE**  
 KNUPATH, TENSTORRENT, Cinescale, NVIDIA, Intel, myvana, Hividus, ferretica, GoogleTPU, 10T Labs, salcomm, Cerebras, Isocore

**RESEARCH**  
 OpenAI, KNOGIN, Numenta, Kinera Systems, Cogita, ELEMENT, vicarious

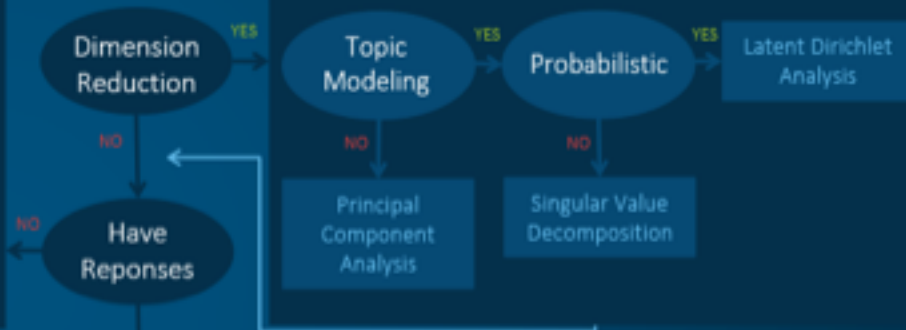
# Machine Learning Algorithms Cheat Sheet

## Unsupervised Learning: Clustering



START

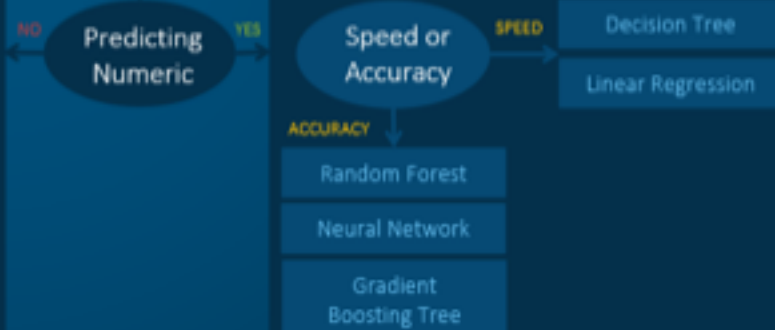
## Unsupervised Learning: Dimension Reduction



## Supervised Learning: Classification



## Supervised Learning: Regression



[Resource](#)

# Smart Compose:

THANKS FOR taking notes. Could you also add them to the weekly n...

I re

om

itio

r A

/ita

lat

**Taco Tuesday**



Jacqueline Bruzek ×

**Taco Tuesday**

Hey Jacqueline,





&amp;



ALGORITHMIA

## Automatic Meta Descriptions

Use the Advanced Summarizer model to summarize long form content



```
import Algorithmia
```

```
input = "A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party  
client = Algorithmia.client('simzJtrJHl+D6Sk1H3TI9cABU+w1')  
algo = client.algo('nlp/Summarizer/0.1.8')  
print(algo.pipe(input))
```



```
We propose a solution to the double-spending problem using a peer-to-peer network. The network timestamps tran
```

# Why SEOs Need To Know About ML:

ML already effects the work that you're doing.

You should be able to speak intelligently about ML (especially with clients).

Level up your skills by adding ML to your toolbox!

# Thank you!



Britney Muller | Moz

 @BritneyMuller