CAT-EGORIZING INSTAGRAM LIKES

Bauer Mcclave

OBJECTIVES

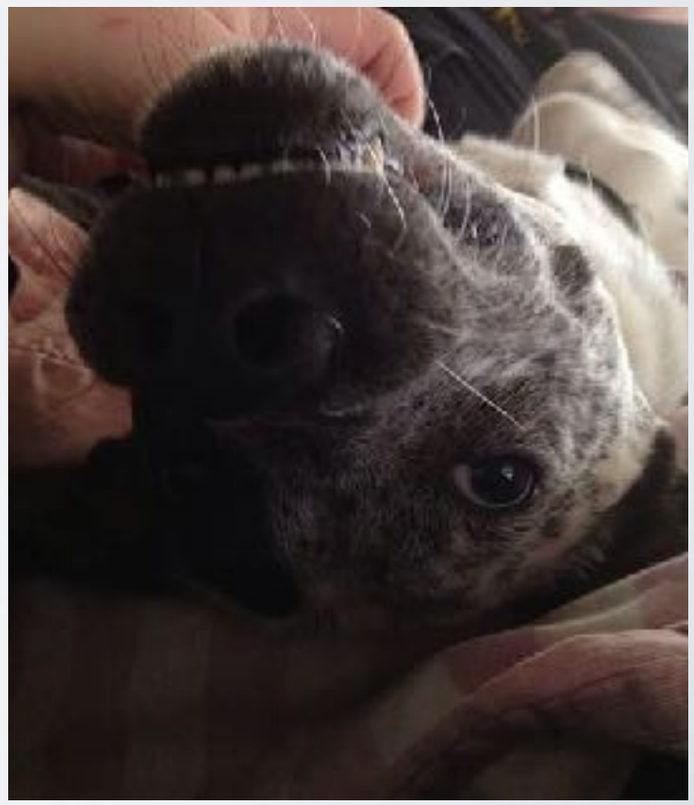
Predict whether a photo will receive

Above Average

or

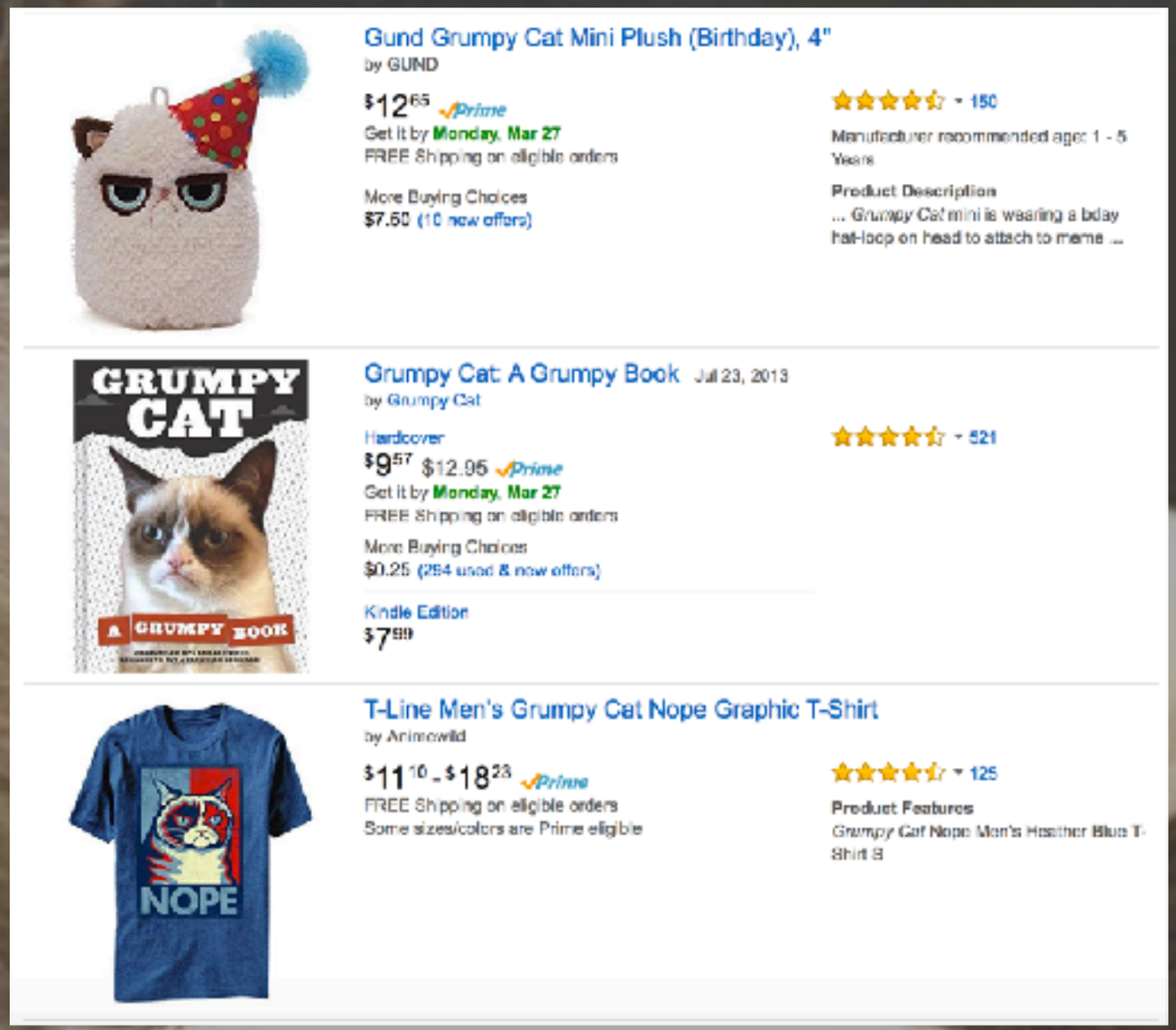
Below Average

Likes on Instagram



USE CASES

- **Popular Instagram accounts:**
  - **Build a following**
  - **Gain sponsorships**
  - **Become a brand**



TOOLS USED

python

amazon web services™

TensorFlow

Keras

Scrapy

PIPELINE

- Data
    - From Instagram and Imgrum scraped
    - 63 cat accounts for 80,521 photos
    - 63 dog accounts for 76,831 photos
- Labeling Good and Poor photos
- Convolutional Neural Network to predict probability

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- Data
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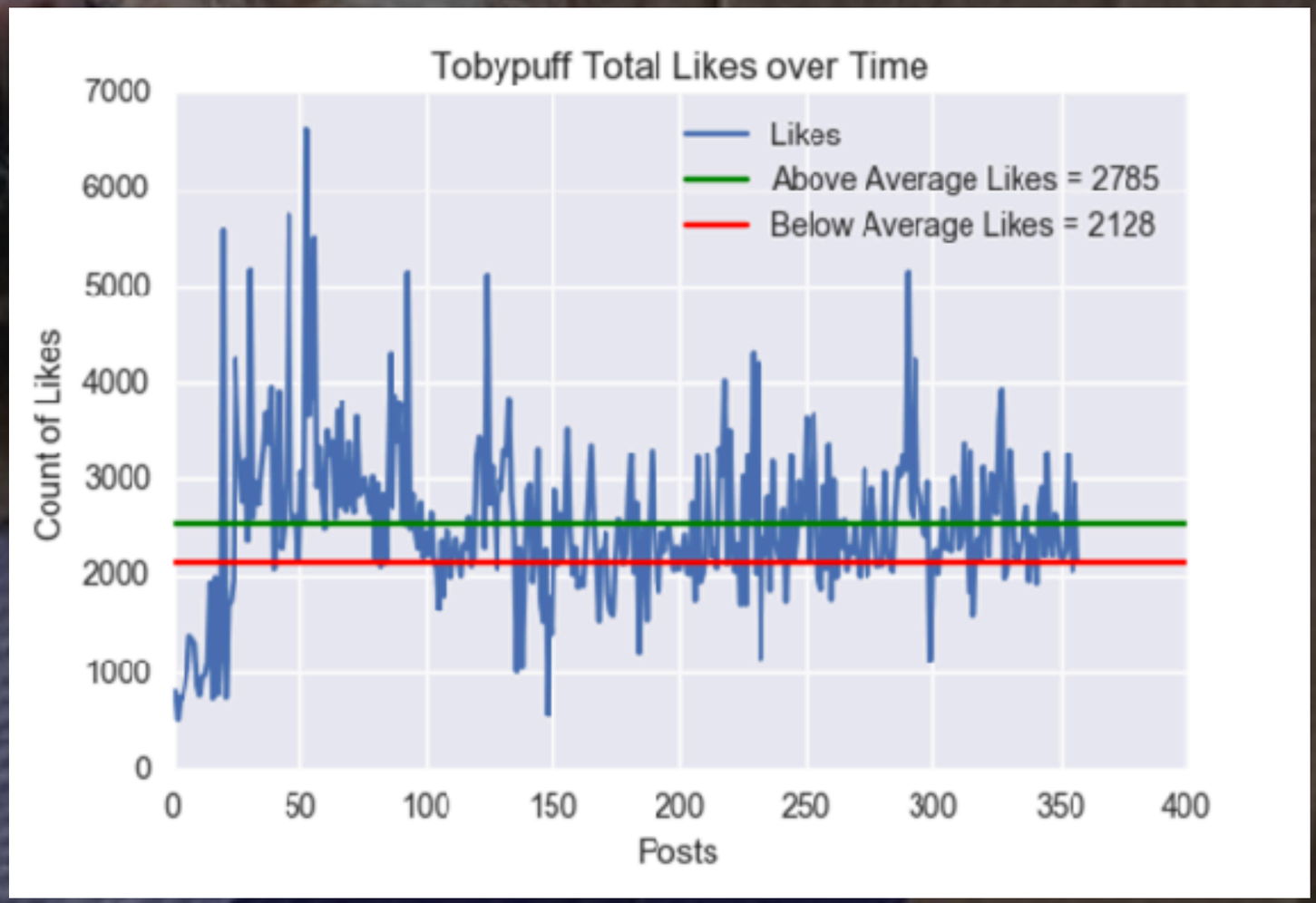
- Convolutional Neural Network to predict photo quality

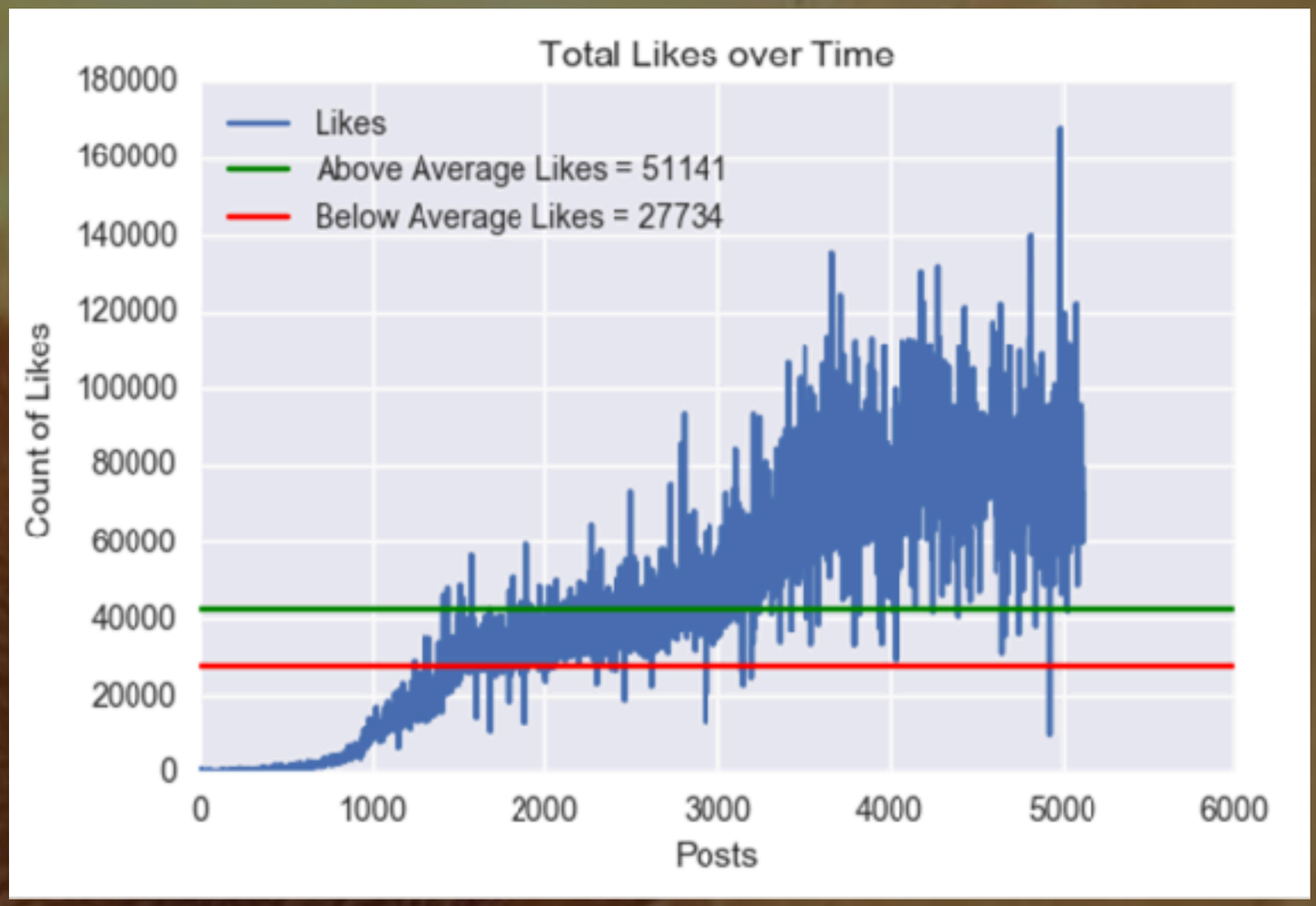
METHOD

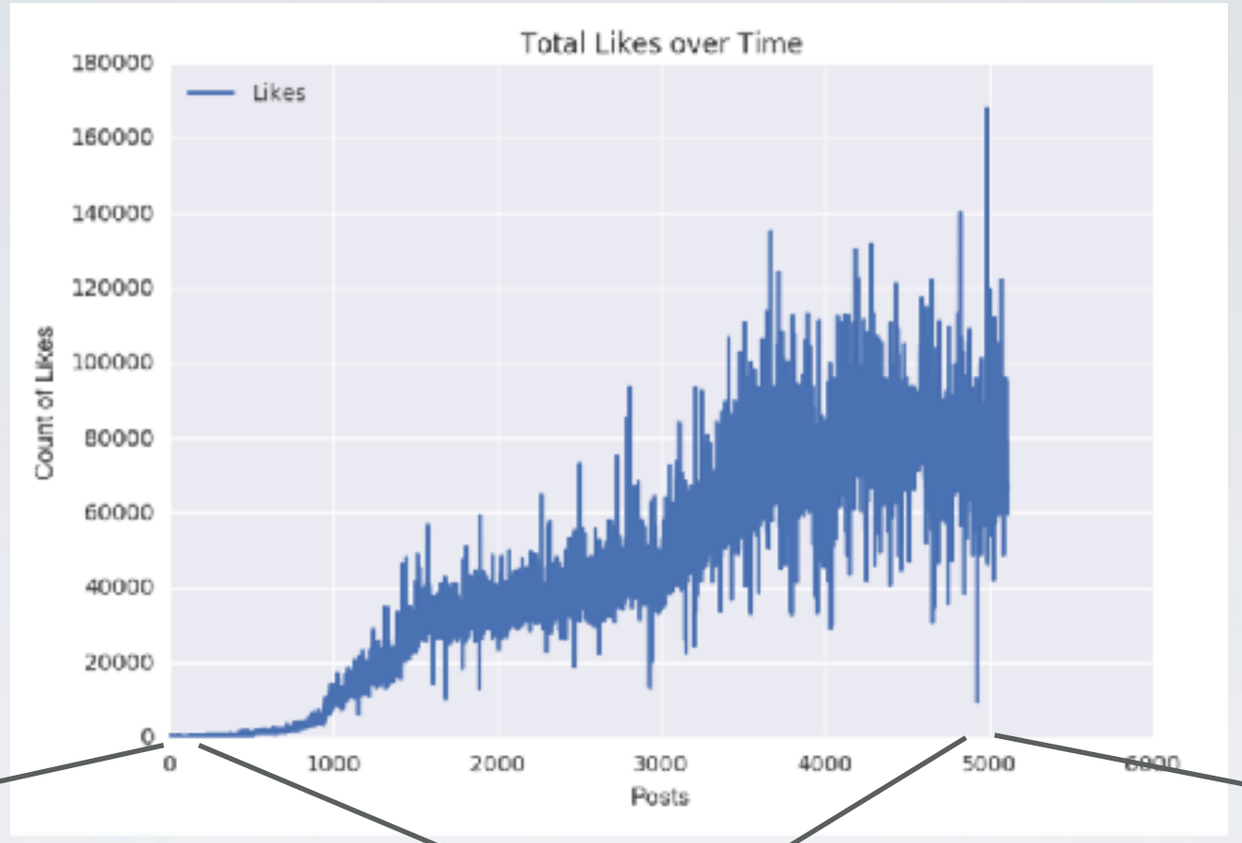
- **Label above and below average photos over the history of a user's posts**

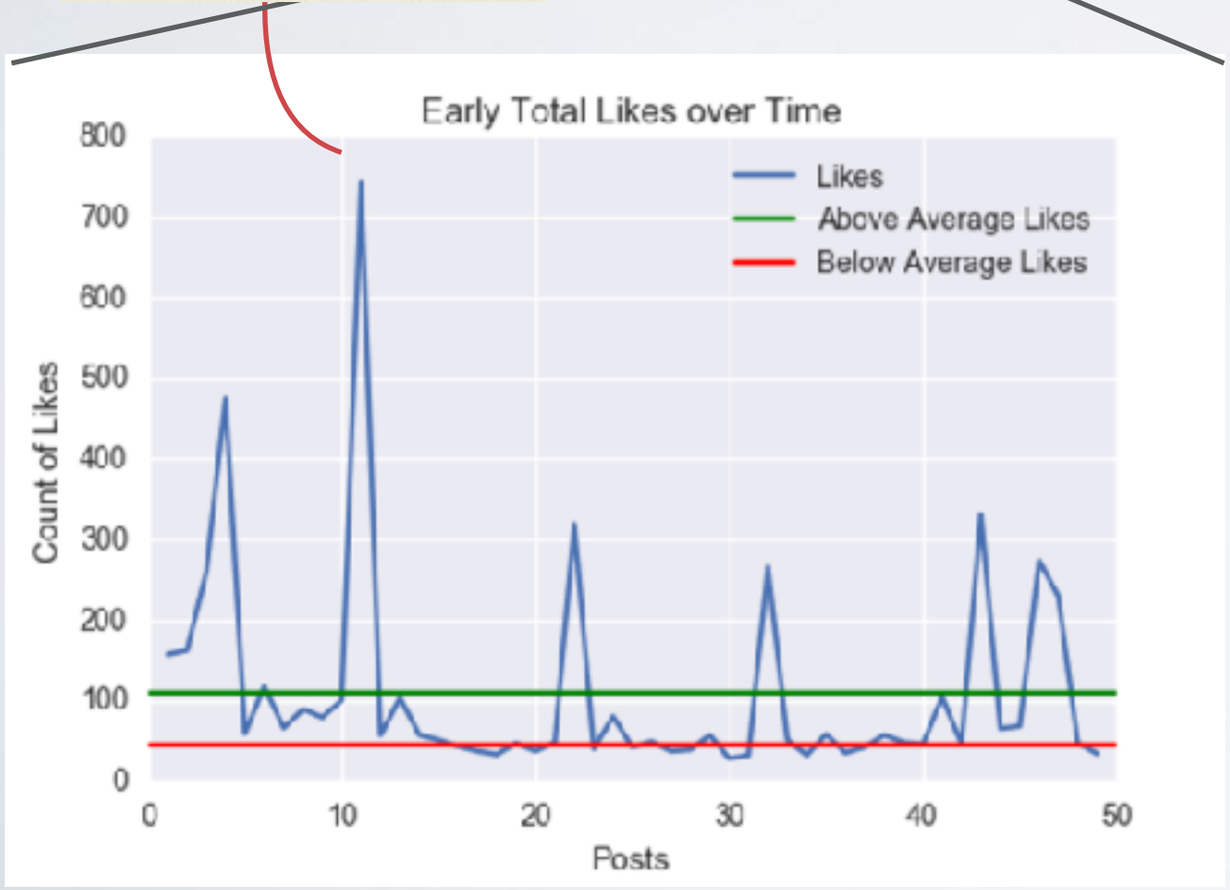


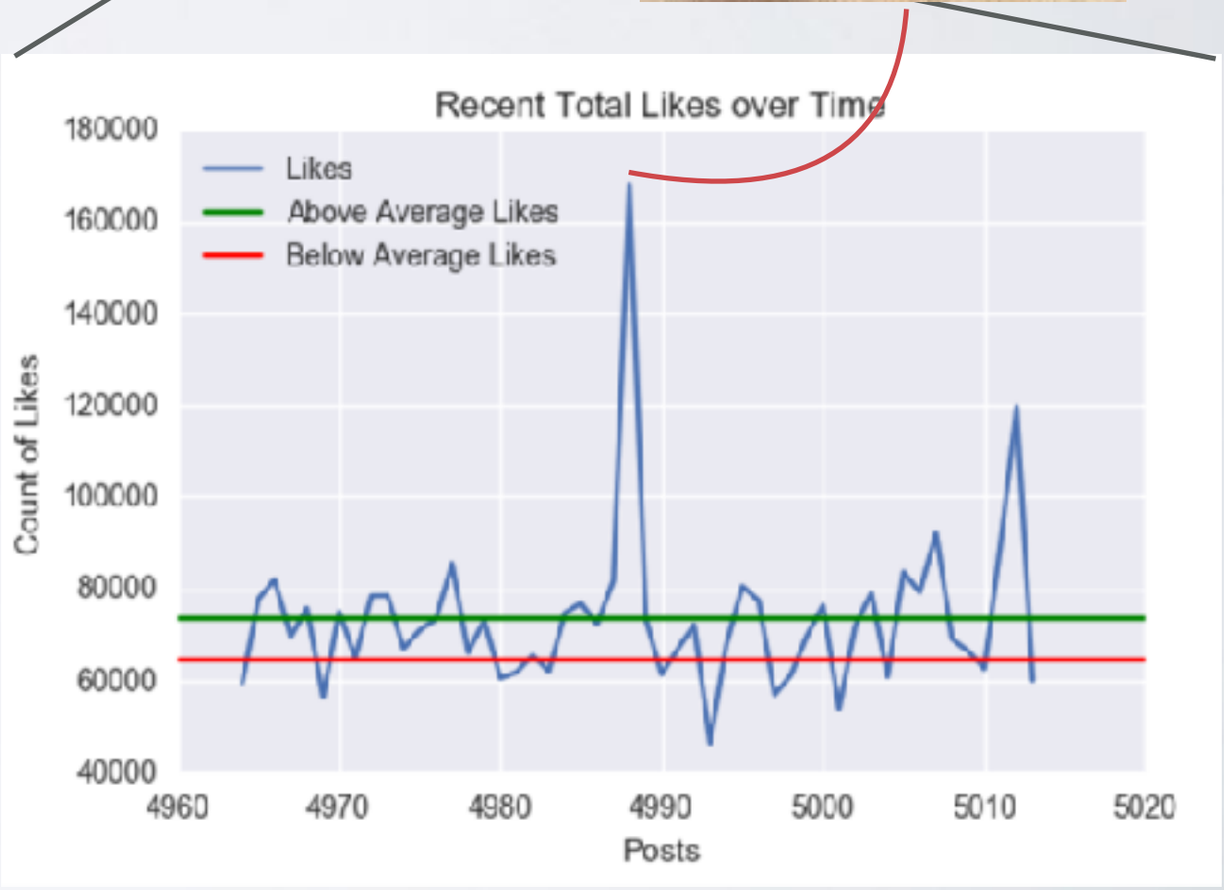
METHOD

- **Mean for all posts does not work for users building a following over time**




Total Likes over Time
Likes
Count of Likes
Posts
0
20000
40000
60000
80000
100000
120000
140000
160000
180000
0
1000
2000
3000
4000
5000
6000


Early Total Likes over Time
Likes
Above Average Likes
Below Average Likes
Count of Likes
Posts
0
100
200
300
400
500
600
700
800
0
10
20
30
40
50


Recent Total Likes over Time
Likes
Above Average Likes
Below Average Likes
Count of Likes
Posts
40000
60000
80000
100000
120000
140000
160000
180000
4960
4970
4980
4990
5000
5010
5020

METHOD - CNN

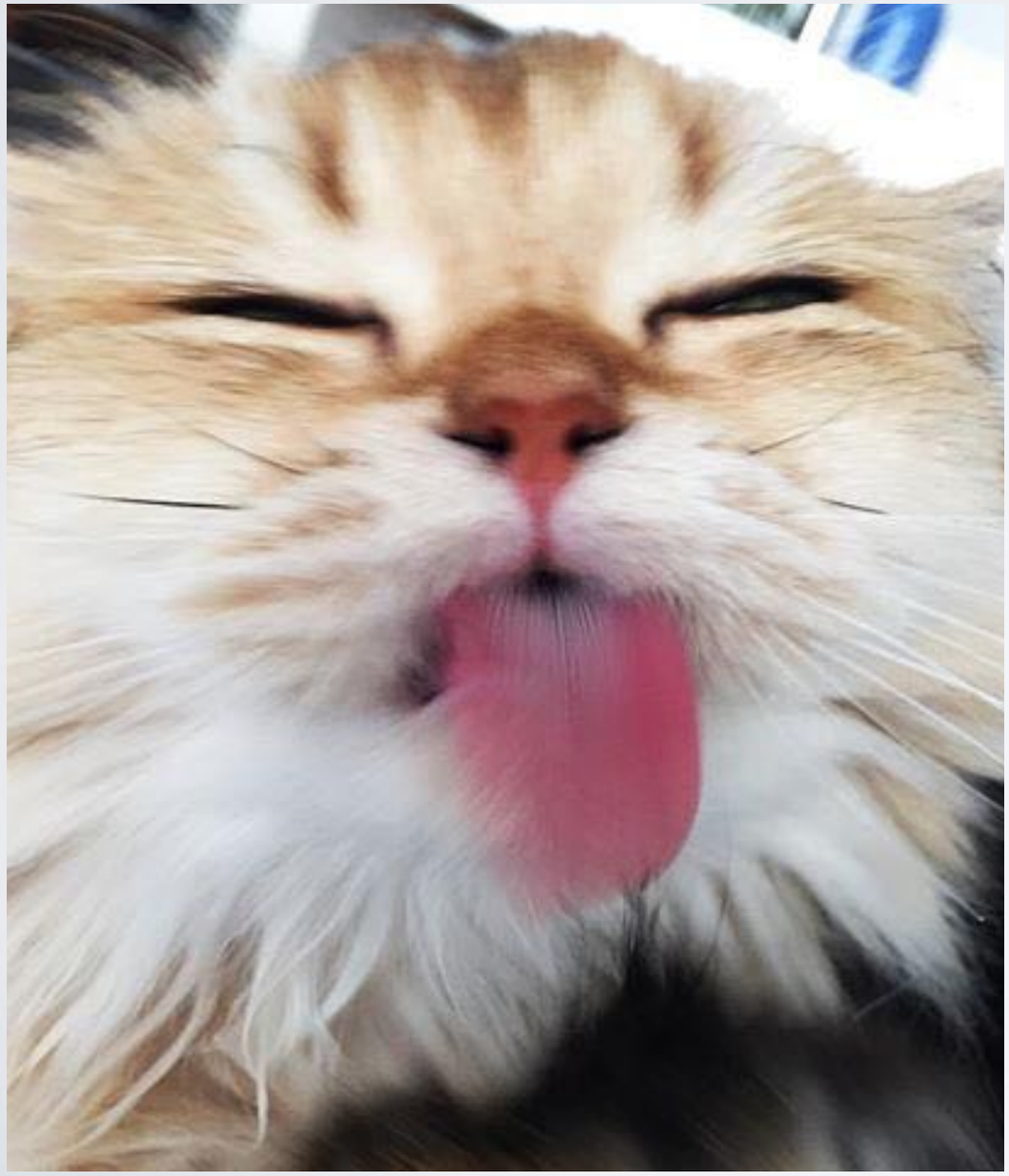
- Convolutional Neural Net
  - Keras & Tensorflow
  - VGG16 pre-trained with Imagenet
  - Dense fully connected layers added on top
- Accuracy:
- Cats - 0.66 & 0.66
- Dogs - 0.70 & 0.65

Layer (type)	Output Shape	Param #
image_input (InputLayer)	(None, 256, 256, 3)	0
vgg16 (Model)	multiple	14714688
flatten (Flatten)	(None, 32768)	0
fc1 (Dense)	(None, 4096)	134221824
fc2 (Dense)	(None, 4096)	16781312
predictions (Dense)	(None, 1)	4097

Total params: 165,721,921.0
Trainable params: 165,721,921.0
Non-trainable params: 0.0

CNN CONSENSUS

- Good Cat Pictures



CNN CONSENSUS

- Good Dog Pictures

CNN CONSENSUS

- Bad Cat Pictures

CNN CONSENSUS

- Bad Dog Pictures

CNN MISHAPS

- High Likes Rated as Poor Photos

CNN MISHAPS

- Low Likes Rated as Good Pictures

UNDERVALUED ON INSTAGRAM?

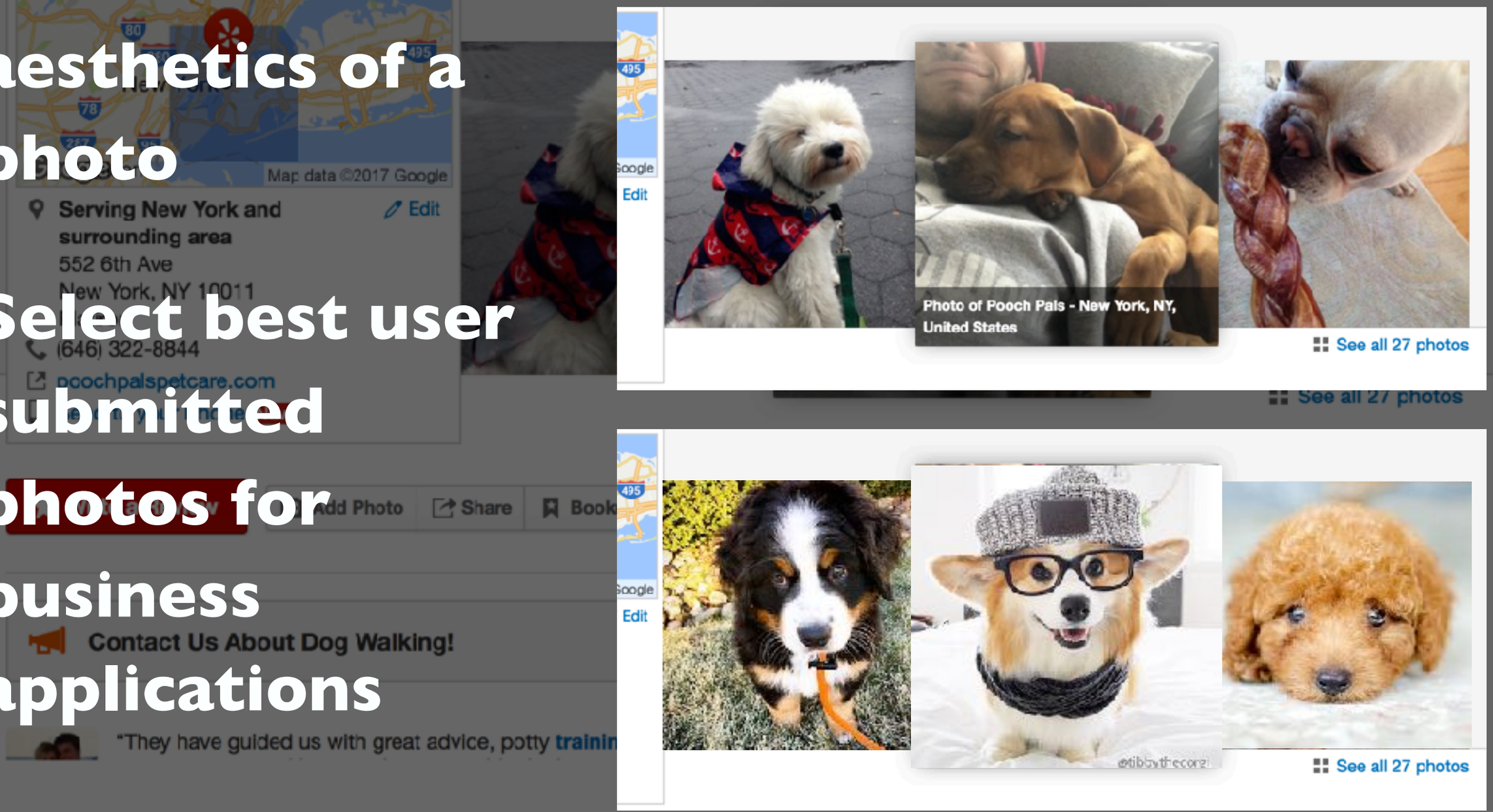
- Labeled below average, CNN classified above average

APPLICATIONS

- Find high quality photos to post on Instagram
- Choose between photos
- Predict most likes possible
- Find on brand photos

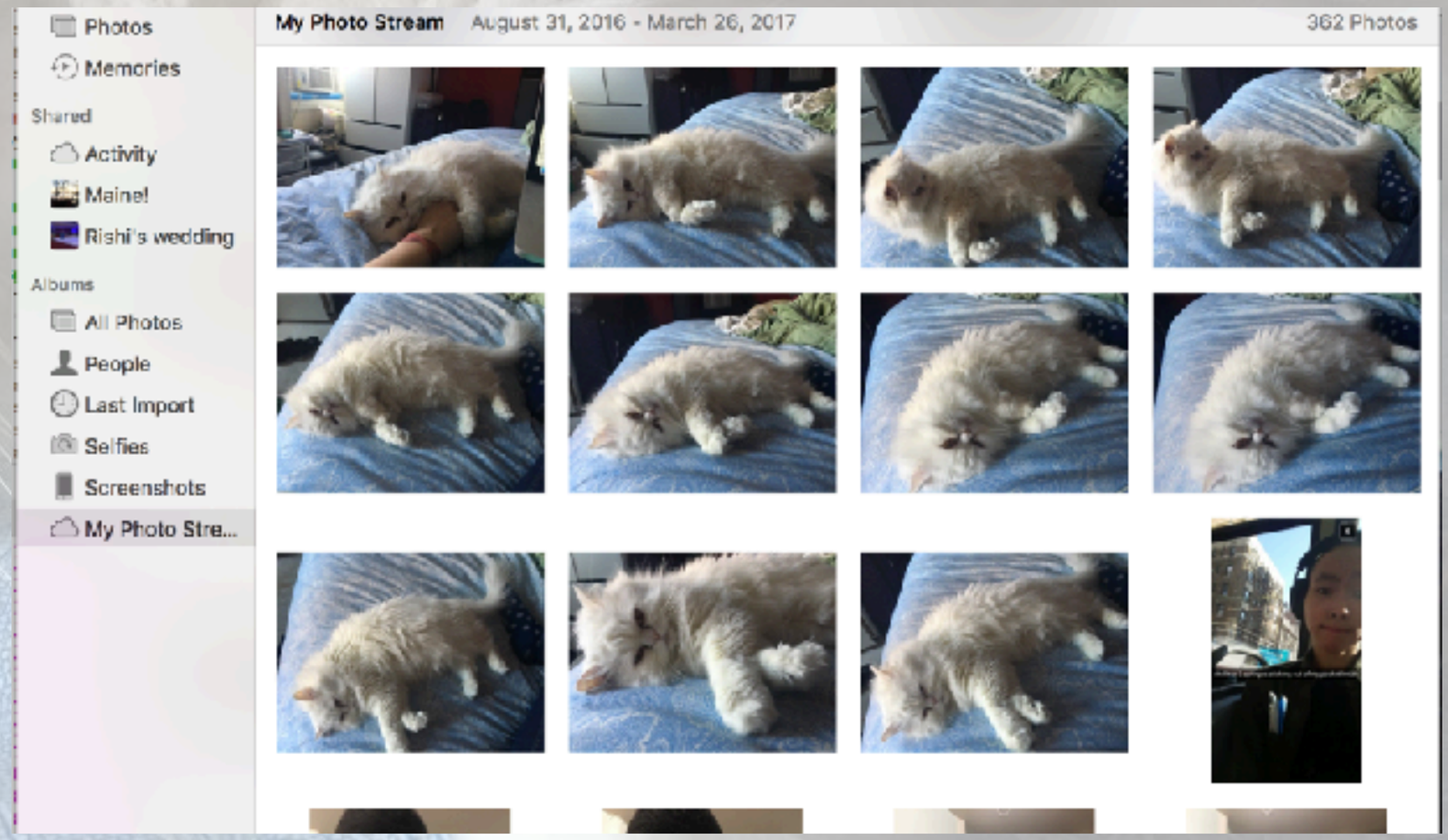
FURTHER APPLICATIONS

- **Generalize to aesthetics of a photo**
- **Select best user submitted photos for business applications**



FURTHER APPLICATIONS

- Create automatic recommendations for in photo filing applications



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