…but better!

That food looks so good! Where is it from??

I can’t decide where to eat :(

OpenCV

Requests

http for humans

fusion

Requests

http for humans

yelp fusion

scikit learn

TensorFlow

In [82]:
```
# train model

model.fit(
    train_data,
    validation_data=valid_data,
    epochs= 10,
     callbacks=[EarlyStopping(monitor = 'val_loss',patience = 4,verbose = 1,restore_best_weights = True),
                ModelCheckpoint('model5a.{epoch:02d}-{val_loss:.2f}.hdf5', verbose=1, save_best_only=True),
                ReduceLROnPlateau(monitor = 'val_loss',patience = 1,verbose = 1)
               ]
)
```

```
Epoch 1/10
2020/2020 [==============================] - ETA: 0s - loss: 1.7331 - accuracy: 0.5579
Epoch 1: val_loss improved from inf to 1.44567, saving model to model5a.01-1.45.hdf5
2020/2020 [==============================] - 34945s 17s/step - loss: 1.7331 - accuracy: 0.5579 - val_loss: 1.4457 - v
al_accuracy: 0.6234 - lr: 0.0010
Epoch 2/10
2020/2020 [==============================] - ETA: 0s - loss: 1.1333 - accuracy: 0.6962
Epoch 2: val_loss improved from 1.44567 to 1.25369, saving model to model5a.02-1.25.hdf5
2020/2020 [==============================] - 32503s 16s/step - loss: 1.1333 - accuracy: 0.6962 - val_loss: 1.2537 - v
al_accuracy: 0.6836 - lr: 0.0010
Epoch 3/10
2020/2020 [==============================] - ETA: 0s - loss: 0.9621 - accuracy: 0.7404
Epoch 3: val_loss improved from 1.25369 to 1.18574, saving model to model5a.03-1.19.hdf5
2020/2020 [==============================] - 32598s 16s/step - loss: 0.9621 - accuracy: 0.7404 - val_loss: 1.1857 - v
al_accuracy: 0.6955 - lr: 0.0010
Epoch 4/10
2020/2020 [==============================] - ETA: 0s - loss: 0.8561 - accuracy: 0.7653
Epoch 4: val_loss improved from 1.18574 to 1.13013, saving model to model5a.04-1.13.hdf5
2020/2020 [==============================] - 32739s 16s/step - loss: 0.8561 - accuracy: 0.7653 - val_loss: 1.1301 - v
al_accuracy: 0.7123 - lr: 0.0010
Epoch 5/10
2020/2020 [==============================] - ETA: 0s - loss: 0.7649 - accuracy: 0.7874
Epoch 5: val_loss improved from 1.13013 to 1.05533, saving model to model5a.05-1.06.hdf5
2020/2020 [==============================] - 32653s 16s/step - loss: 0.7649 - accuracy: 0.7874 - val_loss: 1.0553 - v
al_accuracy: 0.7303 - lr: 0.0010
Epoch 6/10
2020/2020 [==============================] - ETA: 0s - loss: 0.6885 - accuracy: 0.8067
Epoch 6: val_loss did not improve from 1.05533

Epoch 6: ReduceLROnPlateau reducing learning rate to 0.00010000000474974513.
2020/2020 [==============================] - 32780s 16s/step - loss: 0.6885 - accuracy: 0.8067 - val_loss: 1.1192 - v
al_accuracy: 0.7243 - lr: 0.0010
Epoch 7/10
2020/2020 [==============================] - ETA: 0s - loss: 0.3982 - accuracy: 0.8857
Epoch 7: val_loss improved from 1.05533 to 0.73979, saving model to model5a.07-0.74.hdf5
2020/2020 [==============================] - 32814s 16s/step - loss: 0.3982 - accuracy: 0.8857 - val_loss: 0.7398 - v
al_accuracy: 0.8171 - lr: 1.0000e-04
Epoch 8/10
2020/2020 [==============================] - ETA: 0s - loss: 0.3009 - accuracy: 0.9119
Epoch 8: val_loss improved from 0.73979 to 0.73807, saving model to model5a.08-0.74.hdf5
2020/2020 [==============================] - 33650s 17s/step - loss: 0.3009 - accuracy: 0.9119 - val_loss: 0.7381 - v
al_accuracy: 0.8214 - lr: 1.0000e-04
Epoch 9/10
2020/2020 [==============================] - ETA: 0s - loss: 0.2566 - accuracy: 0.9244
Epoch 9: val_loss did not improve from 0.73807

Epoch 9: ReduceLROnPlateau reducing learning rate to 1.0000000474974514e-05.
2020/2020 [==============================] - 33115s 16s/step - loss: 0.2566 - accuracy: 0.9244 - val_loss: 0.7411 - v
al_accuracy: 0.8213 - lr: 1.0000e-04
Epoch 10/10
2020/2020 [==============================] - ETA: 0s - loss: 0.2128 - accuracy: 0.9381
Epoch 10: val_loss improved from 0.73807 to 0.72786, saving model to model5a.10-0.73.hdf5
2020/2020 [==============================] - 33044s 16s/step - loss: 0.2128 - accuracy: 0.9381 - val_loss: 0.7279 - v
al_accuracy: 0.8264 - lr: 1.0000e-05
```

Requests

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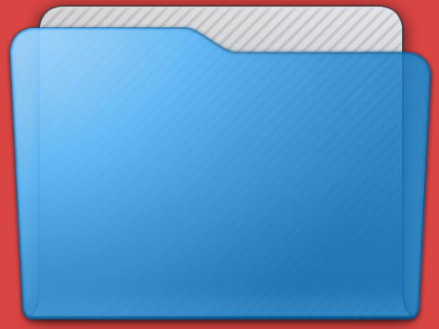
TensorFlow



Training

Validation

Testing

Final Model!!

yelp

In [95]:
```
from tensorflow.keras.preprocessing import image

img_width, img_height = 300, 300
img = image.load_img('/Users/oliviaowen/Downloads/food.jpg', target_size = (img_width, img_height))
img = image.img_to_array(img)
img = np.expand_dims(img, axis = 0)

i = np.argmax(model.predict(img))
i
```

Out[95]: 53

In [97]:
```
dish = foodList[i]
dish
```

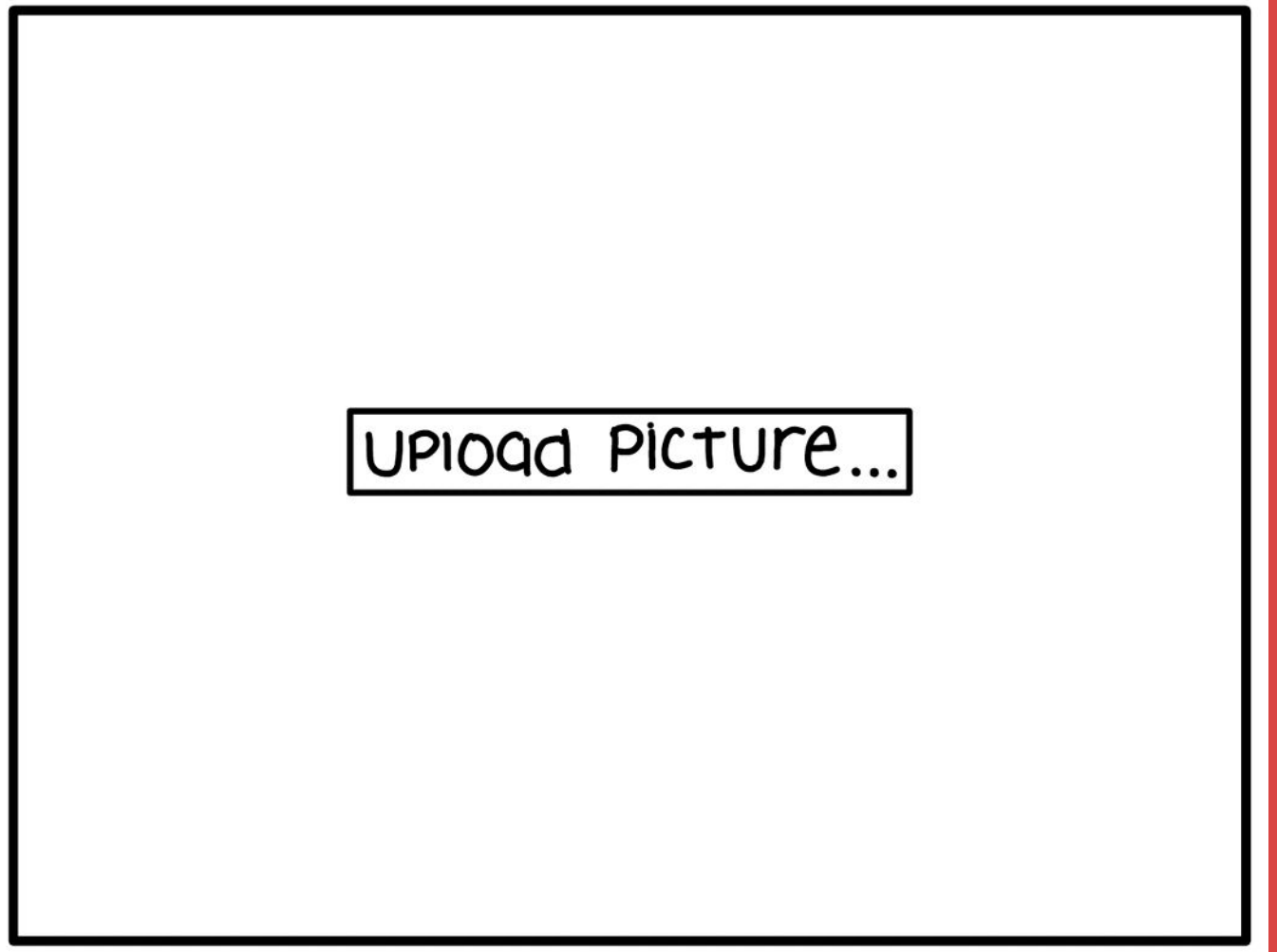
Out[97]: 'hamburger'

In [105]:
```
# API call for dish

search_url = "https://api.yelp.com/v3/businesses/search?"
loc = 'claremont'

search_url += 'term=' + dish + '&' + 'location=' + loc

result = requests.get(search_url, headers=headers)

if result.status_code == 200:
    data = result.json()
    topResult = data['businesses'][0]['name']
    print(f'The top recommended restaurant is: {topResult}\n\n')
else:
    print(f"the request result was {result}, returning {{}}")
    print('{}')
```

```
The top recommended restaurant is: Smoke And Fire Social Eatery
```

Coming Soon...

Flask


upload picture...