# Food Degradation

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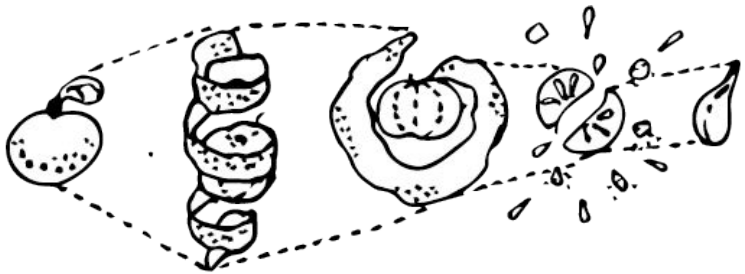
# Contents

# Theme

The aim is to speculate the neglected resourcefulness of food at different stages of degradation.

The utilized dataset is the images of tomato in different forms and ecosystems.

The expected output is a visual life cycle covering its origin, shelf-life and death.



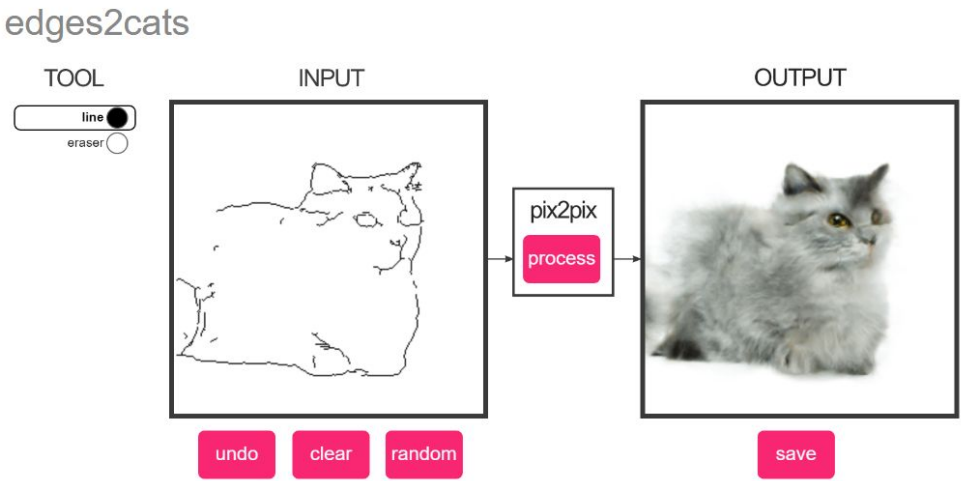
# Existing Resources

Has anybody done something similar?

Is there an existing Colab?

- Image to image to Demo
- CycleGAN
- To detect Rotten

# Existing Resources _ Image to Image Demo




https://affinelayer.com/pixsrv/

# Existing Resources _ CycleGAN

https://junyanz.github.io/CycleGAN/
https://github.com/junyanz/pytorch-CycleGAN-and-pix2pix

# Existing Resources

## How I Made A.I. To Detect Rotten Produce Using a CNN

Ashley C Dec 24, 2020 · 13 min read

## Overview Of The Network

Here is an overview of the code we will be working with.

### Tensorflow

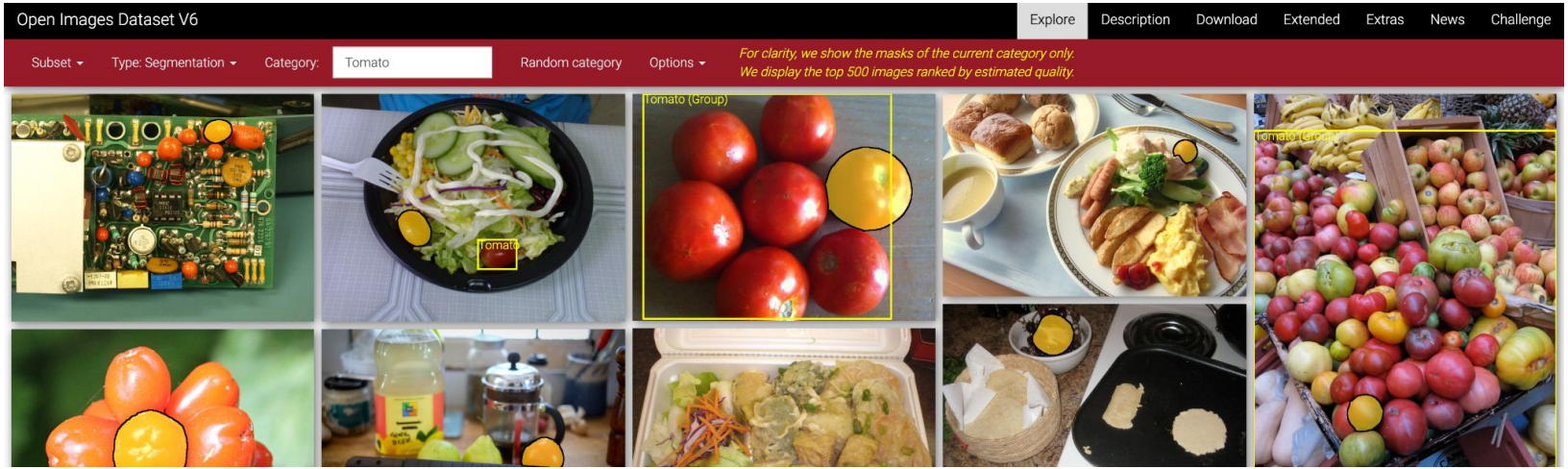
```
#imports
import tensorflow as tf
from tensorflow.keras.models import Sequential
from tensorflow.keras.layers import Dense, Flatten, Dropout, Conv2D,
MaxPooling2D
from tensorflow.keras.preprocessing.image import ImageDataGenerator


#loading directories + data manipulation
train_path =
'/Users/ashleyc/Deeplearning/fresh_and_rotton/dataset/train'
test_path =
'/Users/ashleyc/Deeplearning/fresh_and_rotton/dataset/test'


BATCH_SIZE = 10


train_batches = ImageDataGenerator(

preprocessing_function=tf.keras.applications.vgg16.preprocess_input,
    rescale=1/255,
```

https://ashleyycz.medium.com/how-i-made-a-i-to-detect-rotten-produce-using-a-cnn-f2f16a316914

# Dataset

We thought about creating a data set or adding to existing ones.

**Temponaut Timelapse** on Youtube publish many videos of food decaying. We thought we could download frames from these videos.



# Dataset 1

Is the data uniform?

1. Kaggle: Fruits fresh and rotten for classification

Sriram Reddy Kalluri
https://www.kaggle.com/sriramr/fruits-fresh-and-rotten-for-classification

1.95GB

# Dataset 2

2. Kaggle: Fresh and Stale Images of Fruits and Vegetables: Apple, Banana, Bitter Gourd, Capsicum, Orange & Tomato

Raghav R. Potdar
https://www.kaggle.com/raghavrpotdar/fresh-and-stale-images-of-fruits-and-vegetables

1.53GB

# Dataset 3

3. Fresh-Rotten Fruit Validation: Validation Set for Fresh-Rotten Fruit Challenge

Shadab Ahmad
https://www.kaggle.com/shadabahmad013/freshrotten-fruit-validation

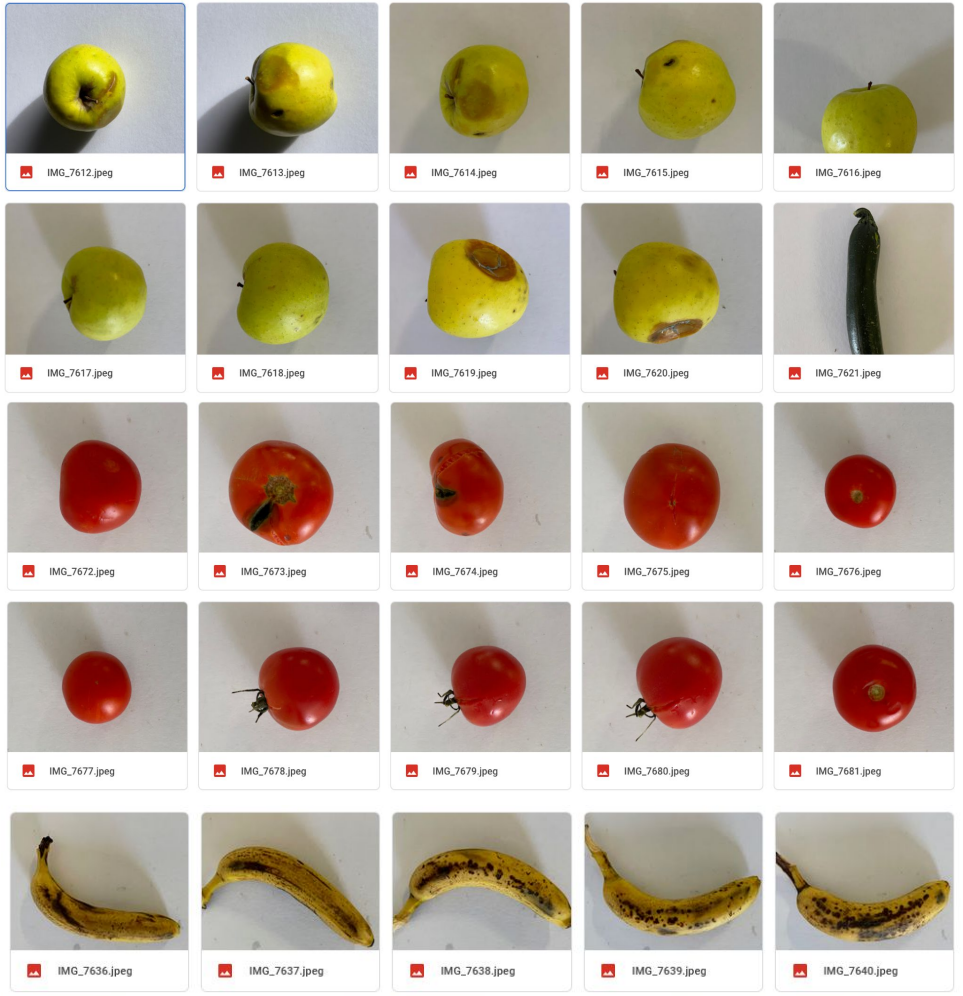
1.28MB

# Dataset 4

4. Design Intervention workshop ‘Conversaciones Maduras’ held on 6th Dec, 2021

Meta group: Solarpunk

174MB



# Progress

Learning how to train a limited dataset using Tensorflow

Preventing ‘overfitting’

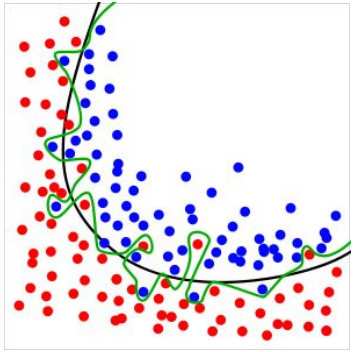
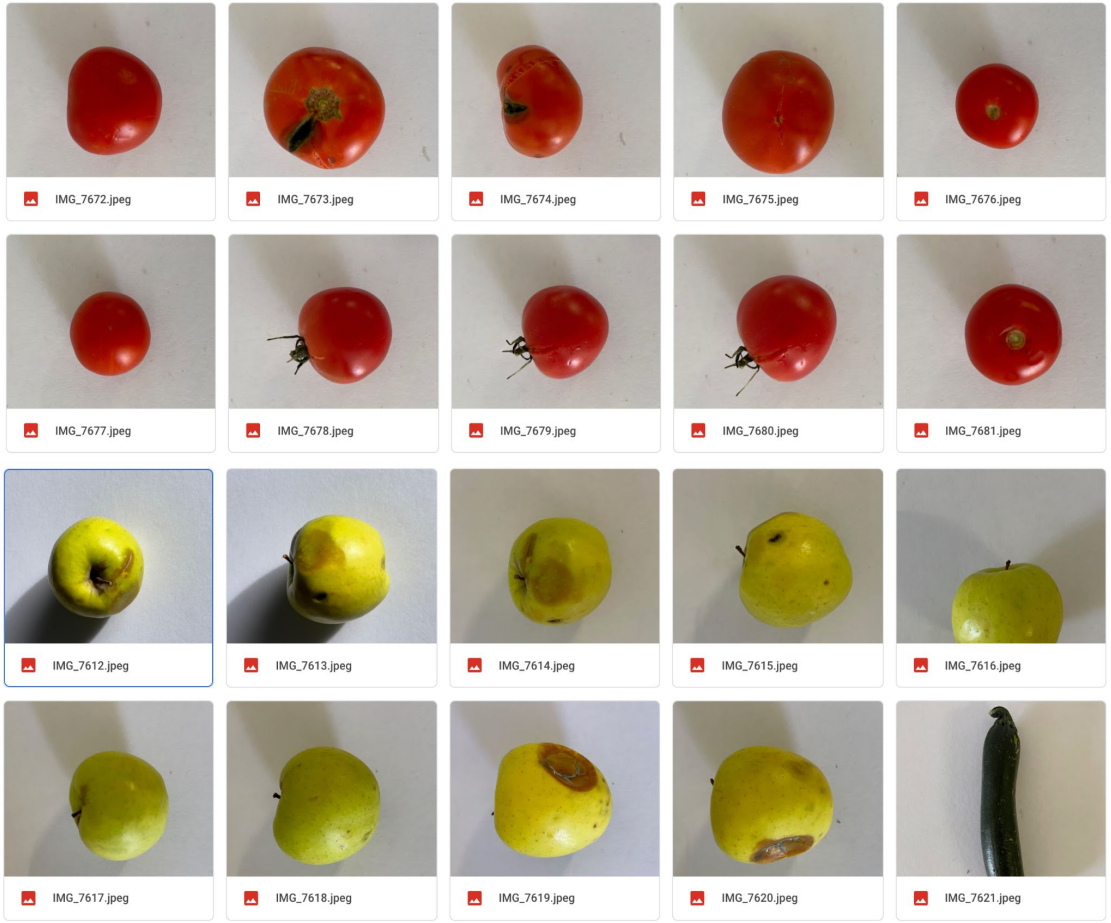


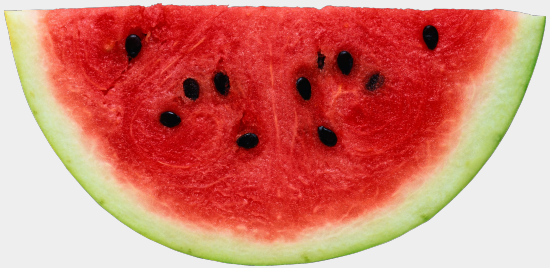
Figure 1. The green line represents an overfitted model and the black line represents a regularized model. While the green line best follows the training data, it is too dependent on that data and it is likely to have a higher error rate on new unseen data, compared to the black line.(source: Wikipedia)



# Process

Train with two given states (fresh and decayed) → generate decayed output of fresh input

xxx times



Training
Neural network

xxx times

# Expected Results

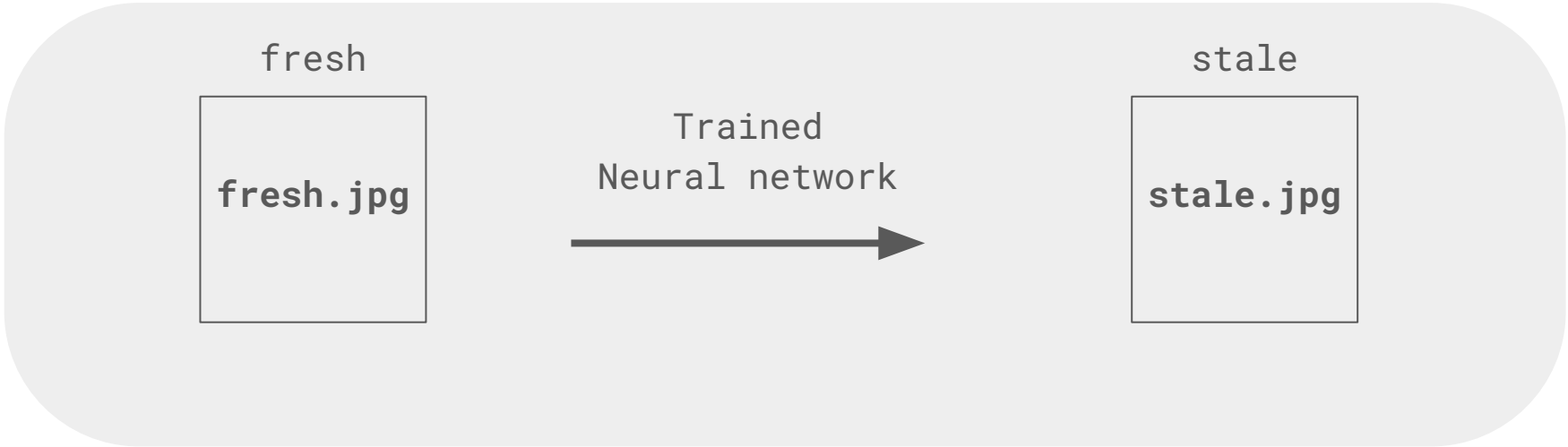
Images? text? video? An article?
We would like to create an animation!

**Reflections and considerations:**

The evolution of food towards its degradation is used as a metaphor for life itself. It explores the human behaviour towards nature with the capitalist system as the catalyst.

The focus is on the exploitation of food systems and the generated waste that feeds the same. The speculation explores not only the benefit of the privilege but also the aspect of us Homo sapiens being a speciesist entity in this ecosystem.

# Expected Results



# Expected Results

fresh

stale.jpeg

Thank you!