TERICSOFT

ARTIFICIAL INTELLIGENCE SERVICES

Image Classification: Fruits

YOLO V3

VS

DATASET

“KAGGLE + GOOGLE + BING”

Custom Training Steps

- Data collection of all possible scenarios from various resources like Kaggle + Google + Bing.
- Drop down the image dataset of 2 classes into separate specific folder containing the '/class_names'
- We are using **YOLO V3** architecture and specifically using the Github link of **AlexyAB darknet**.
- Then, Git Clone the repository using the command **{ git clone** https://github.com/AlexeyAB/darknet.git **}**
  - Now, change the directory using command **{ cd darknet/ }**
  - Then, run the make file using the command **{ make }**
  - Now, do the necessary changes in order to activate the GPU by making:
    - **-> GPU = 1**
    - **-> CUDA = 1**
    - **-> CuDNN = 1**
- After making necessary changes in the make file, again run the **make file.**

Custom Training Steps

- Now, create 4 folders:
  - **train.list** : GIVE THE LIST OF TRAINING IMAGES
  - **test.list** : GIVE THE LIST OF TESTING IMAGES
  - **labels.txt** : GIVE THE NAMES OF THE CLASSES WHICH WE ARE TRAINING
  - **custom.data** : WHICH CONTAINS THE FOLLOWING DETAILS
    - -> **classes**= {{NUM_OF_CLASSES}}
    - - > **train** = {{PATH TO TRAIN.LIST}}
    - -> **test** = {{PATH TO TEST.LIST}}
    - -> **labels** = {{PATH TO LABELS.TXT}}
    - -> **backup** = backup/
    - -> **top** ={{CALCULATE TOP-N ACCURACY AT TEST TIME}}
- Now, change the parameters in the configuration file, i.e., **darknet53.cfg** :
  - In the line **558,** change the filters value to **{"Number of classes"}**
- Finally, run the training using the command: **{ ./darknet classifier train custom.data cfg/darknet53.cfg }**
- Stop the training with accordance with the minimal average loss.

Custom Testing Steps

- Now, you can check the prediction using the command: **{./darknet classifier predict custom.data cfg/darknet53.cfg darknet53_last.weights }**

- Then, **Enter Image Path:** will appear where you must specify your test image path.

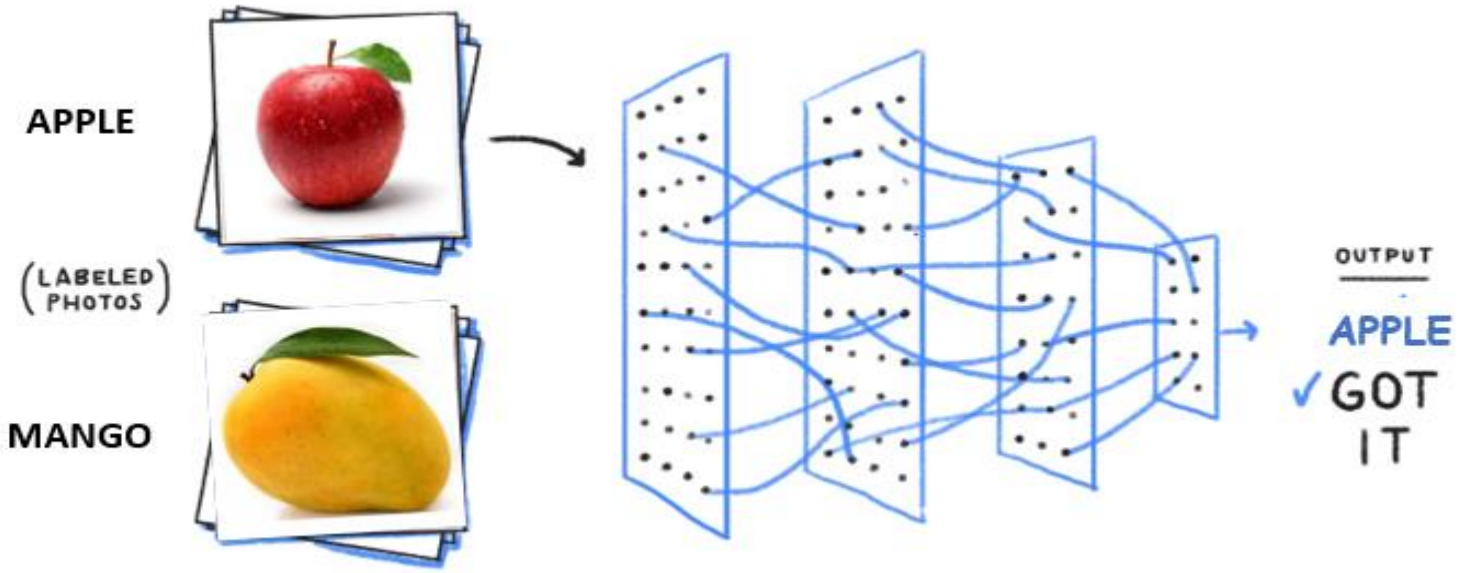


Image Classification: Fruits

RESULTS

✓ Random image of Apple and Mango is taken from Google or Bing and predicted score is tested.

Sample_1.jpg

Acc: 0.84

Sample_2.jpg

Acc: 0.9

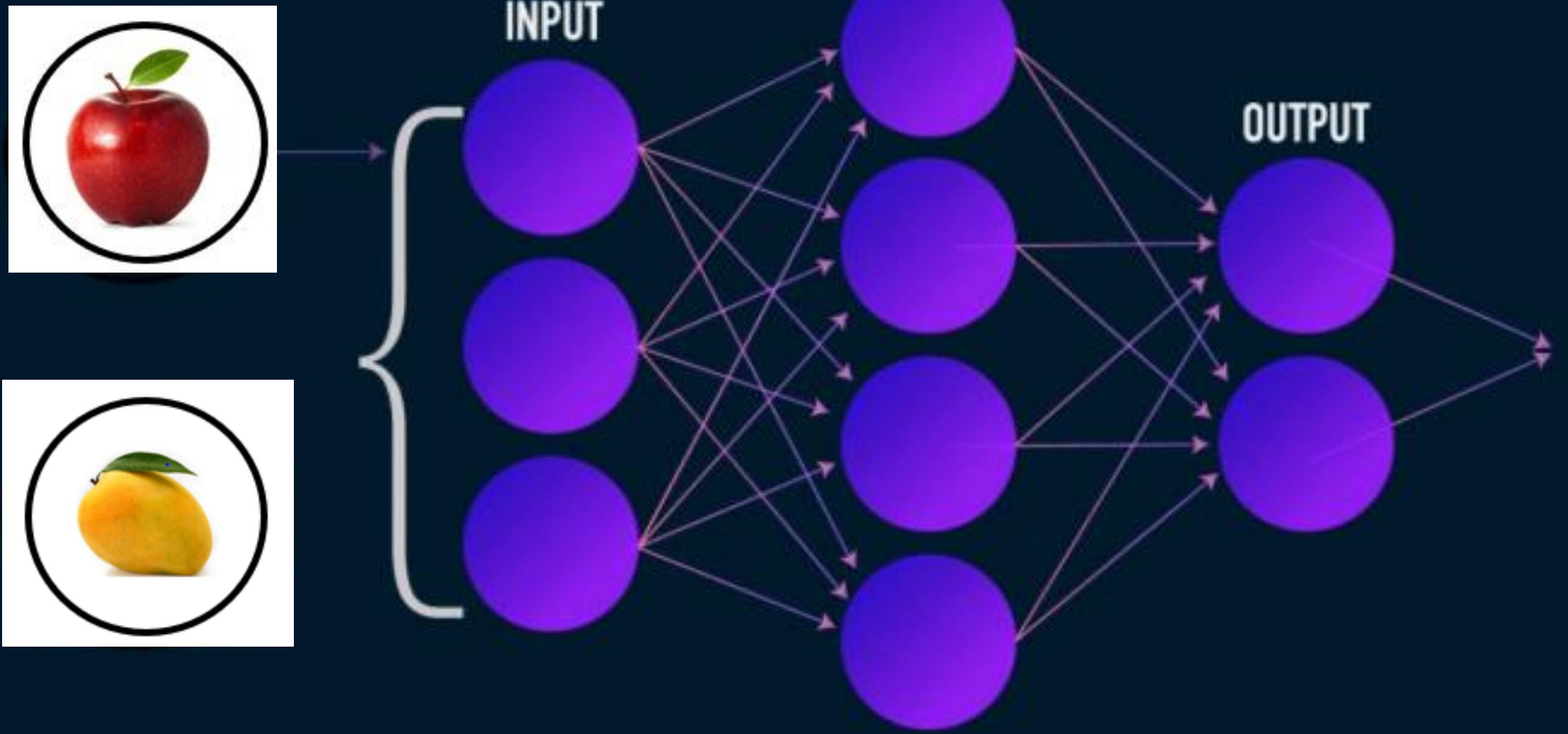
Sample_3.jpg

Acc: 0.74

Sample_4.jpg

Acc: 0.89

Test samples taken from Google & Bing


HIDDEN
INPUT
OUTPUT
APPLE