Deep Learning - Take-home Assignment

Overview

FMCG (Fast-Moving Consumer Goods) brands require insights into retailshelves tohelp them improve their sales. One such insight comes fromdetermining how manyproducts of their brands are present versus howmany products of competing brands are present on a retail store shelf.This requires finding the total number of productspresent on every shelfin a retail store.

Problem Statement

- Given a grocery store shelf image, detect all products present in the shelf image(detection only at product or no-product level). The assignment requires you toimplement an **Object Detector todetect the products present on the shelf**.
- Accuracy of at least 0.5 the mAP on the test set. (More the better)

Dataset

- The dataset to be used for training/testing is the Grocery dataset.
- Link to the dataset: https://github.com/gulvarol/grocerydataset
- Please use the following link to download ShelfImages.tar.gz(contains train and test splits) and replaceGroceryDataset_part1/ShelfImages with this.
- https://storage.googleapis.com/open_source_datasets/ShelfImages.tar.gz

Deliverables

- Source code files - data preparation, training, and evaluationscripts along with readme and requirements files.
- Drawing the detections/predictions from the model 50 test images.
- image2products.json:
  {
  "shelf_image_name_0"(str): number_of_products(int),
  "shelf_image_name_1"(str): number_of_products(int),
  "shelf_image_name_2"(str): number_of_products(int), …
  "shelf_image_name_n-1"(str): number_of_products(int)
  }
  a dictionary containing an entry for every shelf image in thetest set with theimage name as 'key' and the number of productspresent in it as 'value'.

- metrics.json:mAP, precision, and recall computed on the test set.
  {
  "mAP"(str): 0.5(float),
  "precision"(str): 0.75(float),
  "recall"(str): 0.55(float)
  }
- README:Description of dataset preparation, augmentation (if any), detectionnetwork used, training parameters/hyper-parameters, and anchorbox tuning.
- All the above archived in one single .zip or .tar fileproduct_detection_firstname_last_name for eg: product_detection_john_doe.tar.gz