Deep Learning based Automated Billing Cart

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Abstract: *Nowadays, shopping malls have become an integralpart of life and people in cities often go shopping malls in order to purchase their daily requirements. In such a place, the environment must be made hassle-free. Our system is mainly designed for edible objects like fruits and vegetables. For edible products like vegetables and fruits, bar-codes and RFID tags cannot be used as they have to be stuck on each of the items and the weight of each item has to be individually measured. The proposed system consists of a camera which detects the commodity using Deep Learning techniques and a load cell which measures the weight of the commodity attached to the shopping cart. This system will generate the bill when the customer scans the item in front of the camera which is fixed on to the Cart. There are many methods for implementation of object detection. Methods like R-CNN use region proposal to generate bounding box and then run a classifier throughout the bounding box. Then the duplications are eliminated using post-processing technique. R-CNN is a slow method for object detection. For this reason, we use YOLO model.*

Keywords: Billing Cart; YOLO; RFID; Deep Learning; Microcontroller.

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