CROWD DETECTION IN OPDS OF PUBLIC HOSPITALS USING CUSTOMISED YOLO

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Abstract

The extensive growth of the population has resulted in forming uncontrollable crowds and queues in public places. The Outdoor Patient Departments (OPDs) in government hospitals are frequently crowded with uncontrolled queues, resulting in various difficulties for both the patients as well as the staff. Therefore, crowd detection and counting techniques can be used to find a solution to these issues. However, the techniques used for detecting crowds vary according to the circumstances. The focus of this study is to enhance the efficiency of the Patient Management in OPDs in Government Hospitals, by introducing the application of crowd detection mechanism to identify and calculate the amount of people in OPDs crowd. This study has focused on developing an effective crowd detection technique to be used in the OPDs. This will help to diminish the waiting time of the patients. The count can be used to effectively manage the patients who wait in queues for hours to get their treatments. There are various existing crowd detection and counting techniques which can be applicable in different application scenarios. However, these techniques cannot be used to detect the crowd at OPD premises, which specifically needs a specialized detection technique. This study comparatively analyse a customized OPD crowd detection technique and evaluates with the state-of-the-art methods for detecting the crowd to find the best approach to count the people at OPD premises. Through this study, a customised crowd detector was developed and the efficiency of the detector was analyzed. The accuracy of our custom dataset was analyzed by comparing it with the publicly available COCO dataset.

Keywords: *crowd detection, YOLO, OPDs, patient management*