SCHOOL OF INFOCOMM

Computer Vision

Partner Organisation: Football Association of Singapore (FAS)

Project Overview

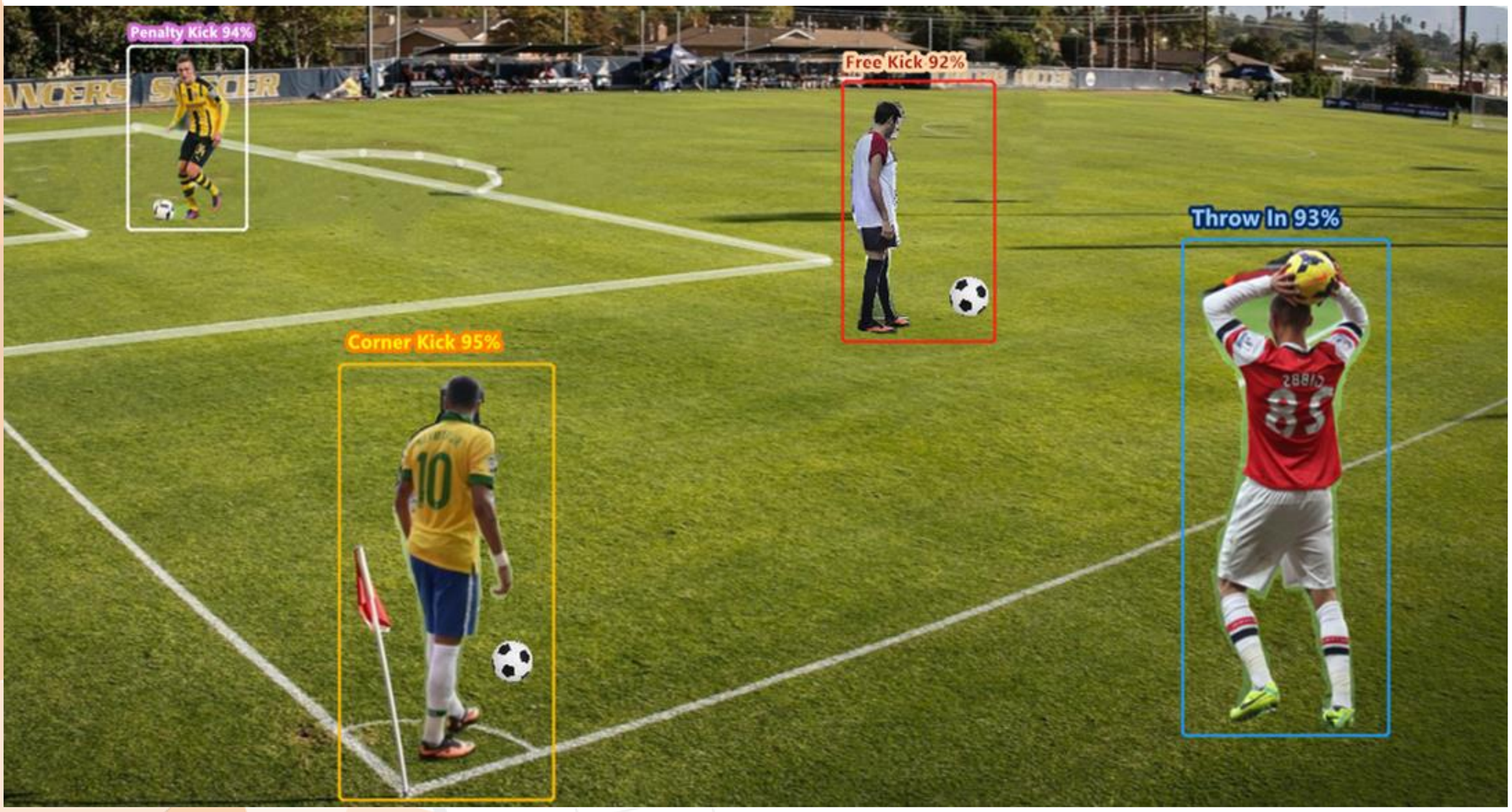
Problem: In a sports event, a referee is needed in order to determine the happenings during the event and then perform specific actions based on the key events that they have identified. However, a referee might misjudge for some events, hence we want to ensure that all key events are identified automatically and correctly.

Requirements: A detection system is required in order to detect the key events. We are training the models to detect specific objects based on four different algorithms. The trained models are used to detect the objects using Tensorflow object detection API.

Solution: A custom-trained detection system will be built to detect 4 different objects in a soccer match. (Penalty Kick, Free-Kick, Throw-In, Corner Kick) using the 4 different algorithms (Single Shot Detectors, YOLO v3, Faster R-CNN and Mask-RCNN).

With the detection model set in place, it will help to automatically detect the key events which help to reduce any human errors, increase convenience and accuracy. The output can either be image, video or webcam.

Technologies: Tensorflow, NumPy, Algorithms, Using the Anaconda virtual environment, Python



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Detecting the 4 key events in a Soccer match using 4 different algorithms

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