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and
World Congress on
Computer Science, Machine Learning and Big Data

August 30-31, 2018   Dubai, UAE

Efficient way for detecting and tracking of object irrespective of speed of the motion

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Multiple object detection and tracking is still facing some difficulties like efficiency, reliability and creation of datasets. In this paper we are going to present about the efficient way of detecting and tracking of multiple objects regardless of the speed of its motion. We use tensor-flow in combination with OpenCV in which both are open source. We use tensor-flow for training the data sets for object identification and Kalman filtering algorithm for motion tracking and embed them into OpenCV for real-time image/video manipulations. We use SSD (Single Shot multi-box Detector) architecture of convolutional neural network for training the dataset for minimizing the GPU requirement than RCNN (Region Convolution Neural Network). We have also implemented a special algorithm that will boost the SSD model's accuracy to some extent. The datasets for any training model needs to be well suited and labeled which is somewhat difficult to create that dataset. To reduce the difficulty of that we have proposed another technic by which we can just send the dataset with noise into the OpenCV only with labels. Then system will automatically crop those image from the datasets according to the requirement of the architecture (SSD) used. This will help us in creating datasets in a simple and cost efficient way.

Biography

S Sharan Kumar is pursuing final year engineering at St Joseph's College of Engineering, Chennai, India. He has participated in world's biggest hackathon and was one among top 10 teams in the respective node.

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