Multichannel Object Detection with Event Camera

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Abstract : Object detection based on event vision has been a dynamically growing field in computer vision for the last 16 years. In this work, we create multiple channels from a single event camera and propose an event fusion method (EFM) to enhance object detection in event-based vision systems. Each channel uses a different accumulation buffer to collect events from the event camera. We implement YOLOv7 for object detection, followed by a fusion algorithm. Our multichannel approach outperforms single-channel-based object detection by 0.7% in mean Average Precision (mAP) for detection overlapping ground truth with IOU = 0.5.

Keywords : event camera, object detection with multimodal inputs, multichannel fusion, computer vision
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