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Event-Based Motion Segmentation of Small Objects in the Wild

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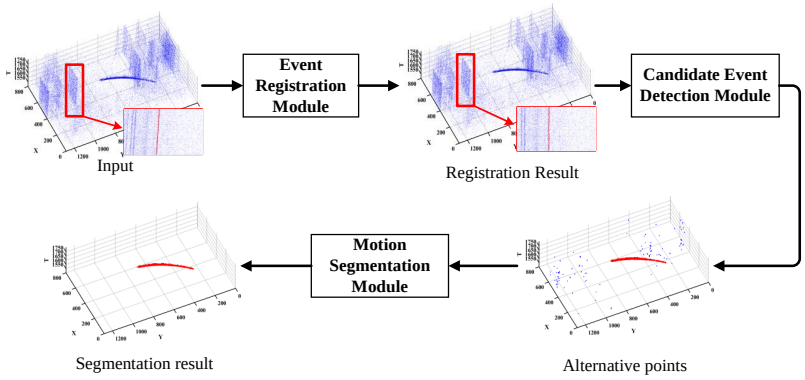
Abstract

Event-based cameras are sensitive to brightness changes and can capture rich temporal information with very high temporal resolution, which has great potential for motion segmentation of moving objects. Under static background, events are only triggered by motion of objects, thereby moving objects can be easily segmented. However, in many real-world applications, events are also be triggered by the motion of camera or background and submerge the ones corresponding to moving objects. In this letter, we propose an event-based motion segmentation method to segment moving small objects in events obtained from the wild. First, motion estimation is performed to align the events triggered by the background. Then, candidate events corresponding to moving objects or moving backgrounds are detected. Finally, motion information is adopted to segment the events of moving small objects from the ones triggered by the background. In addition, we develop the first dataset for event-based motion segmentation of small objects, namely EMSS. Experimental results demonstrate the effectiveness of our method and show that our method can achieve robust motion segmentation of small moving objects in the wild.



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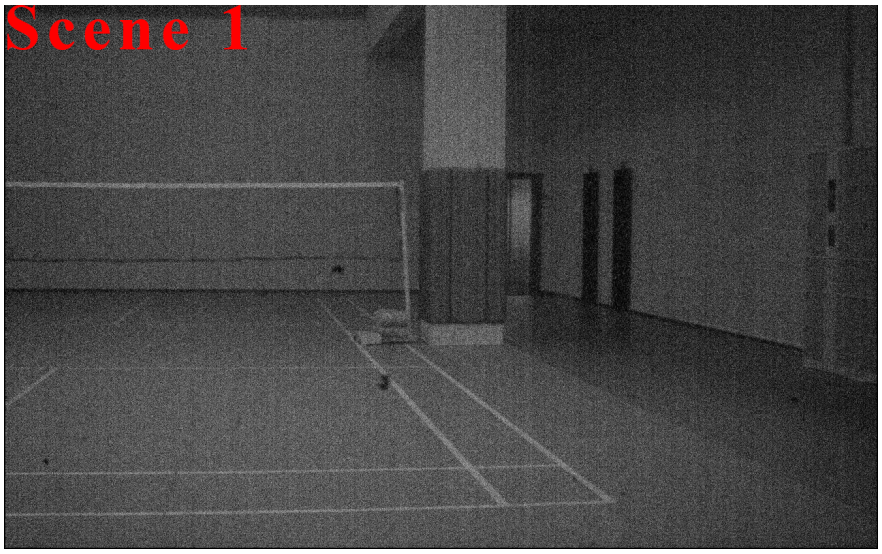

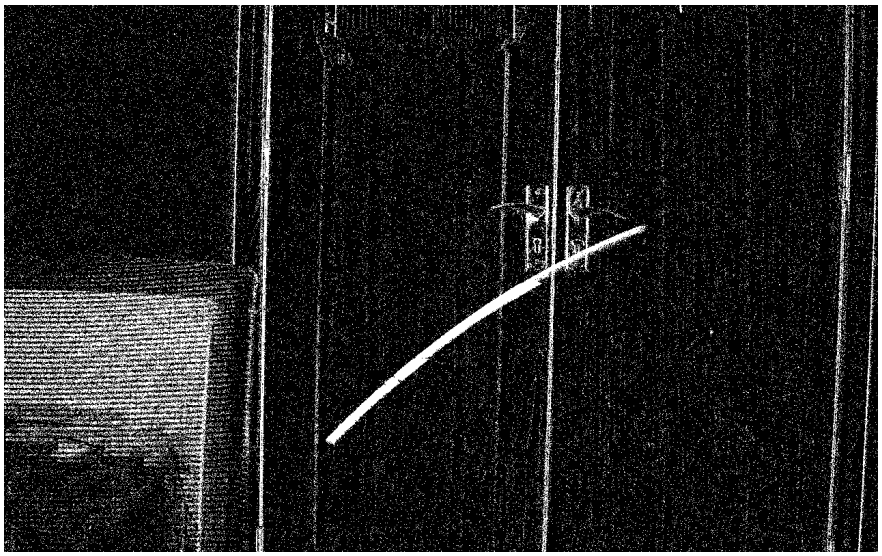

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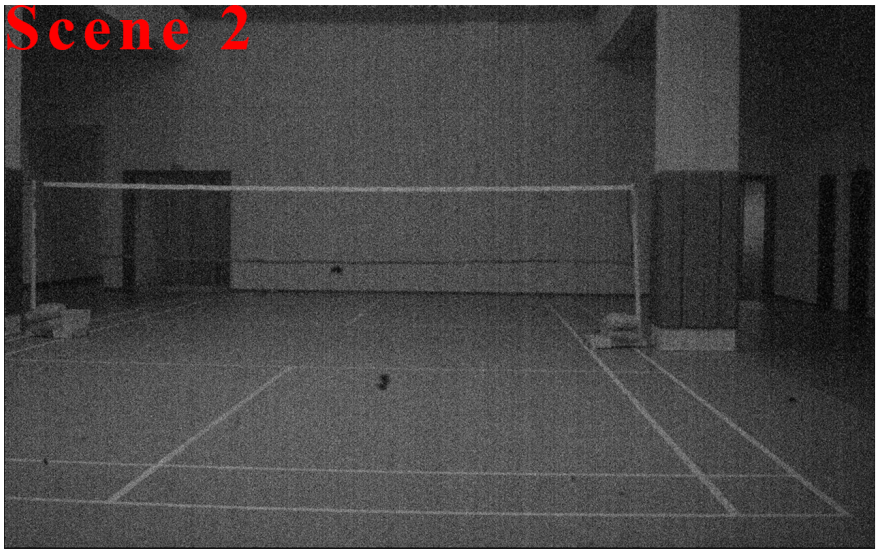

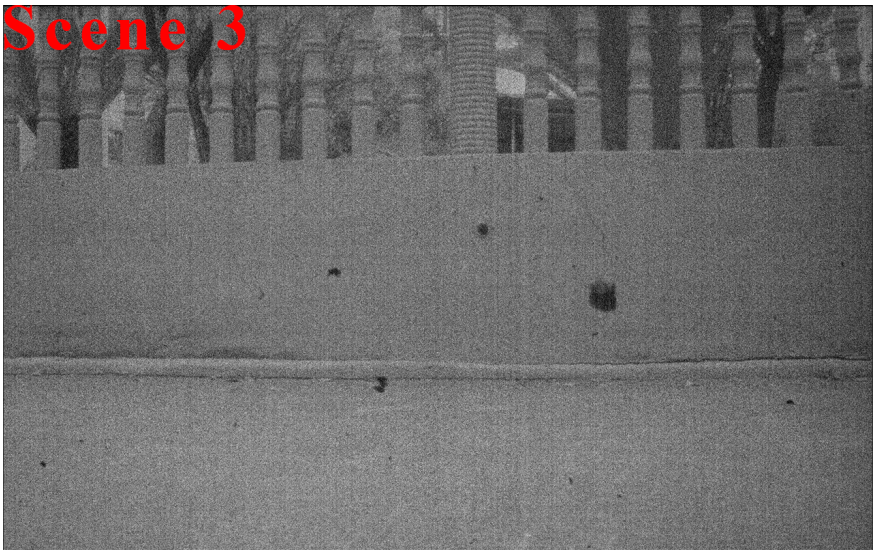

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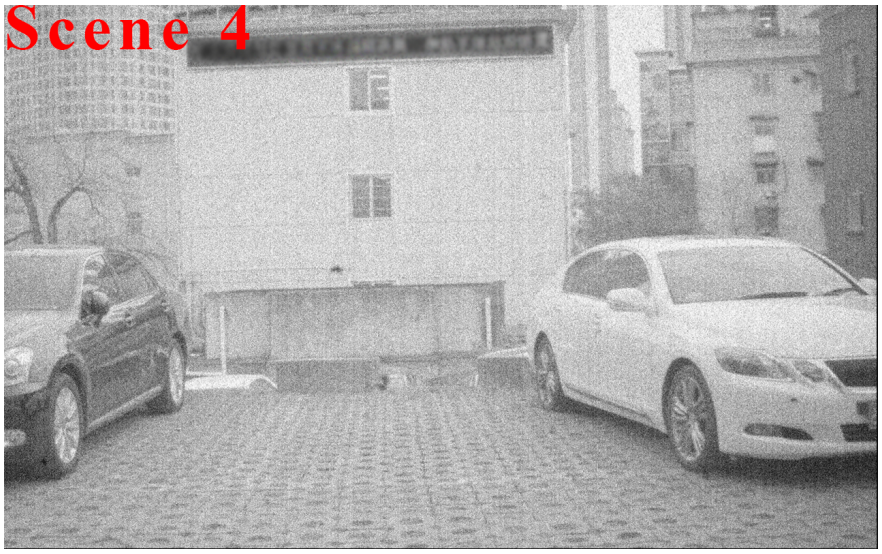

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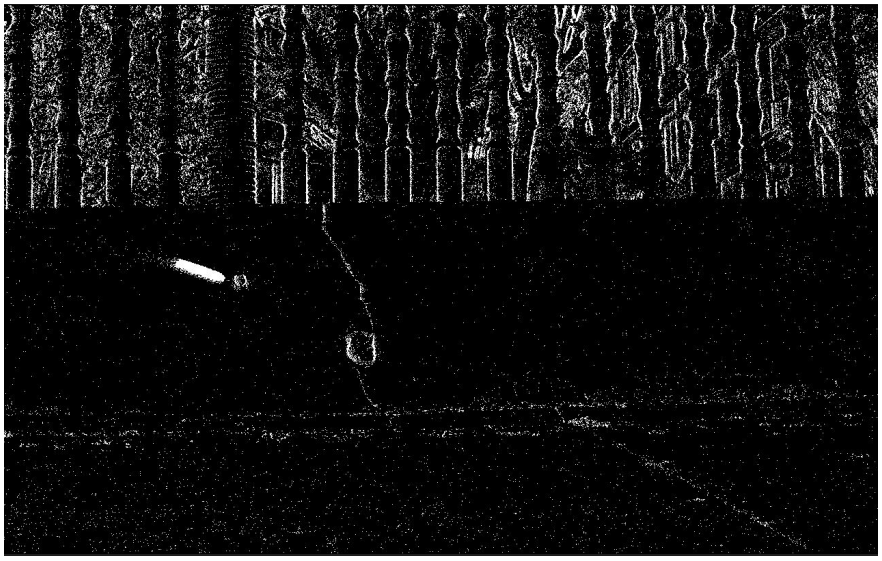

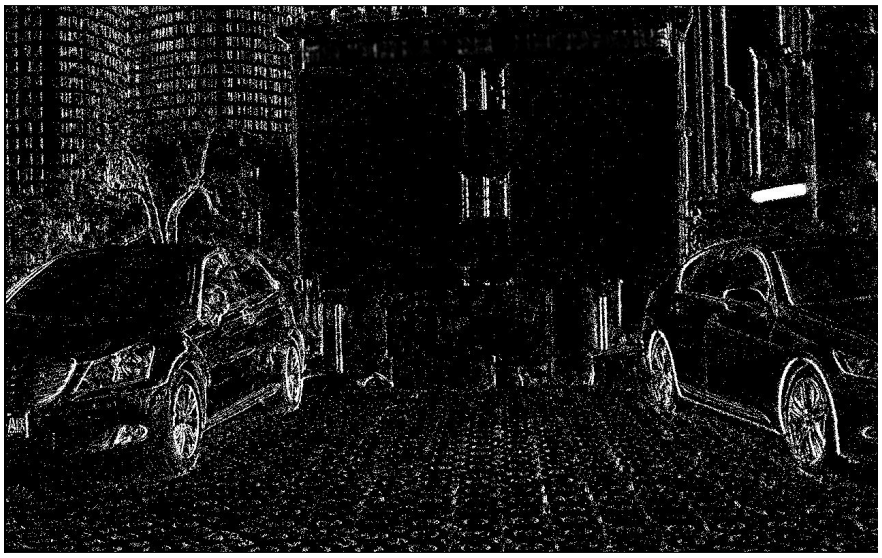

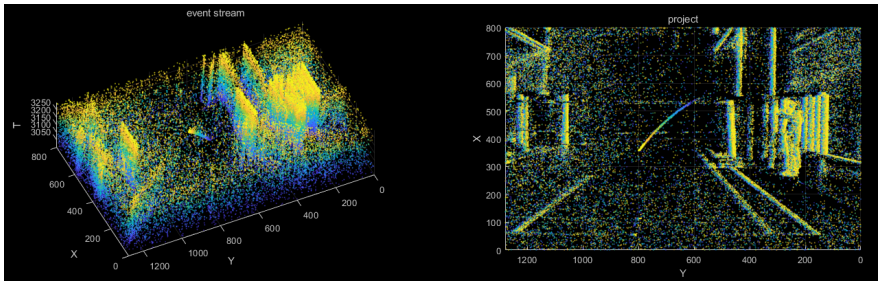

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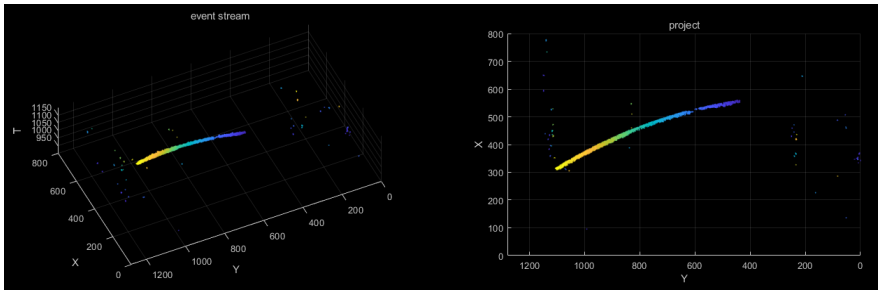

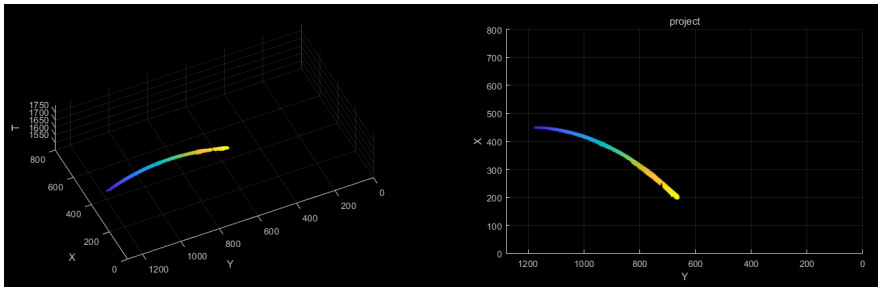

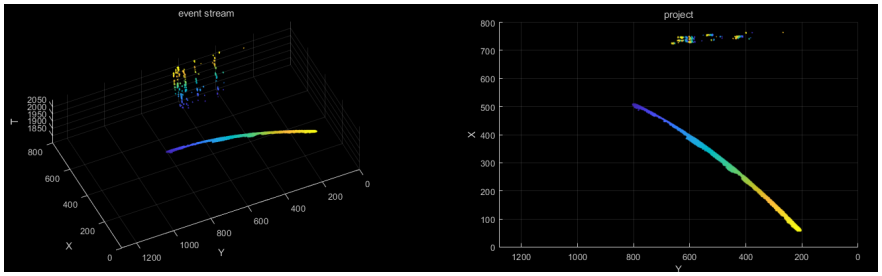

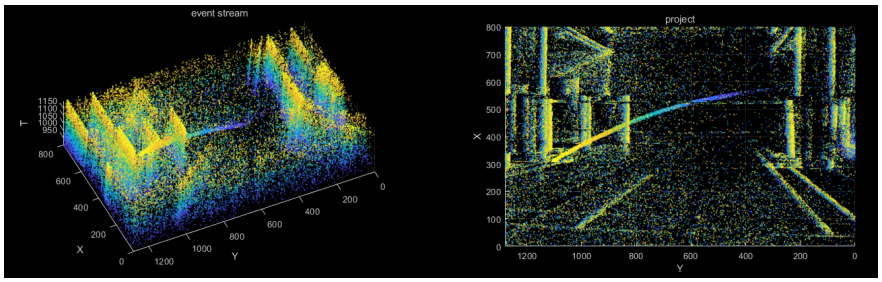

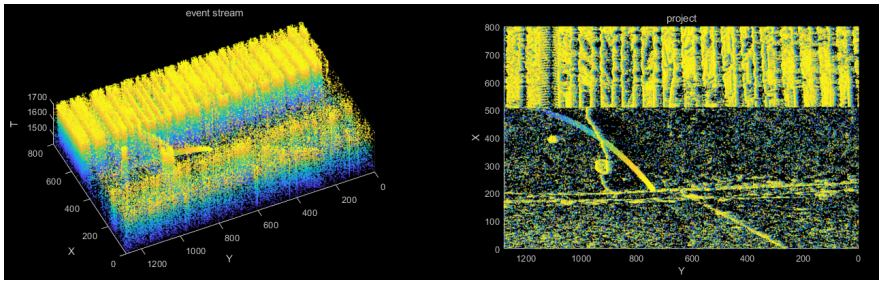

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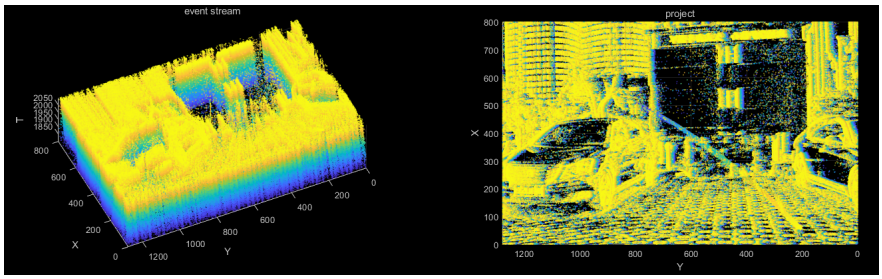

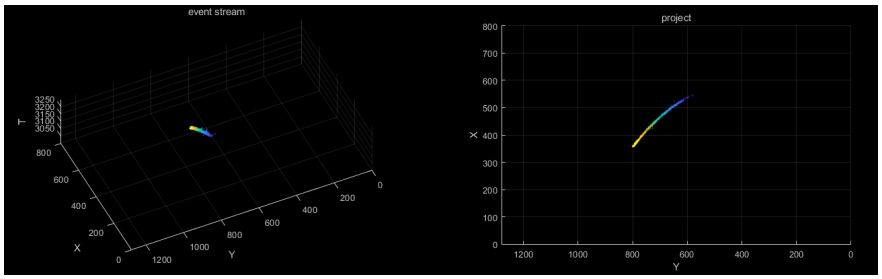

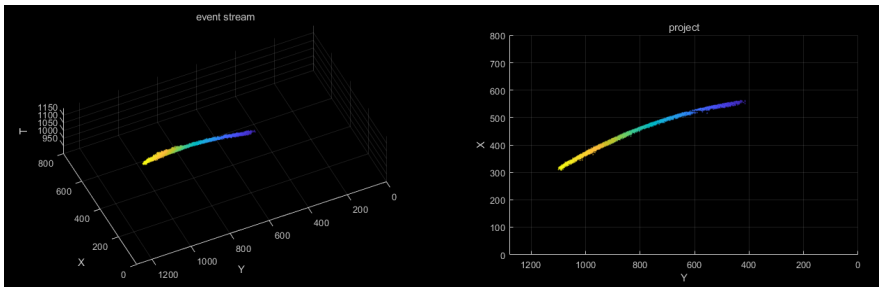

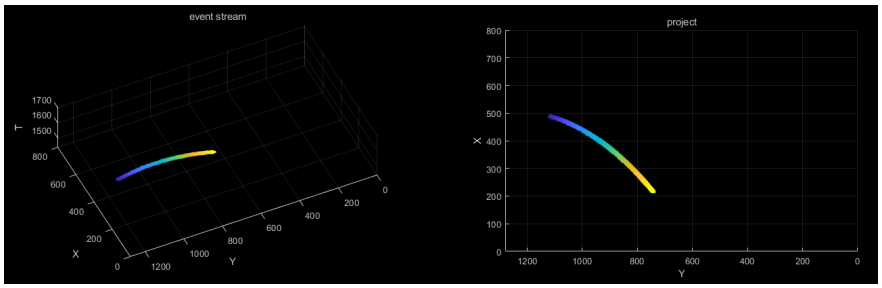

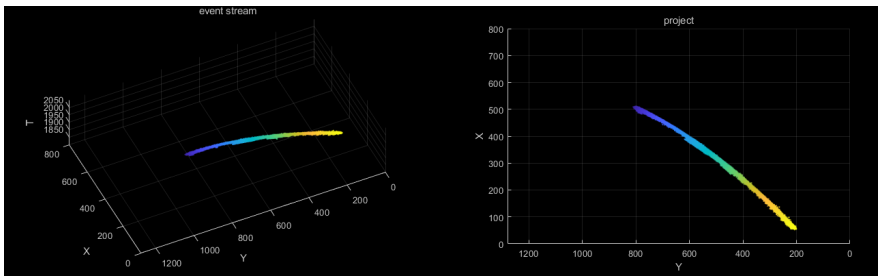

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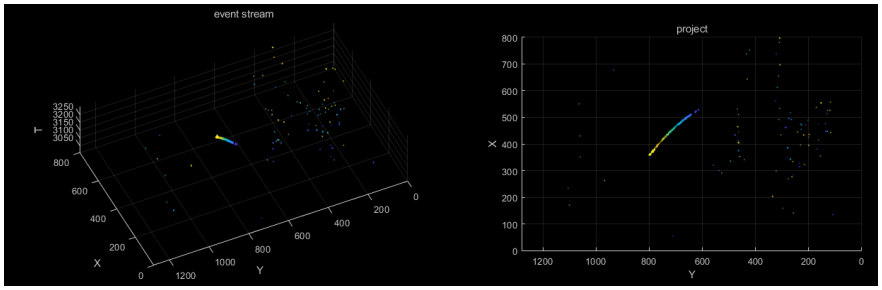

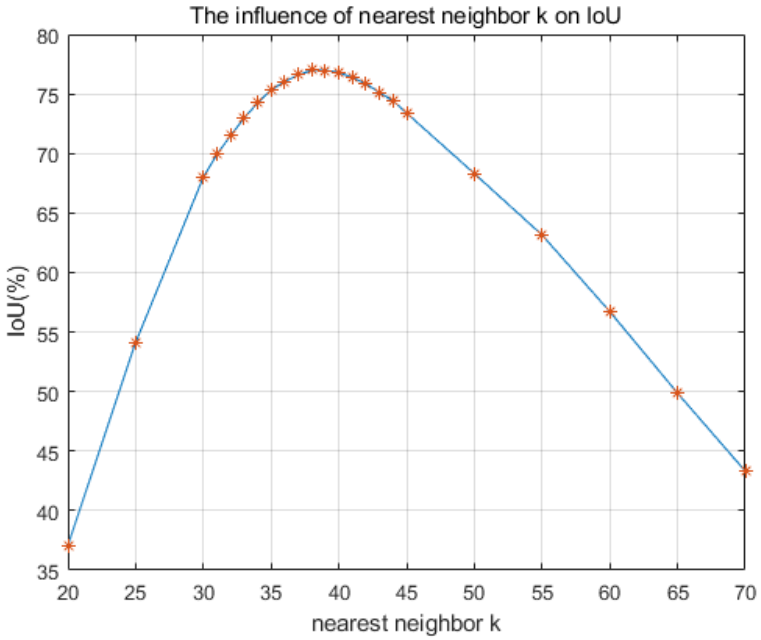

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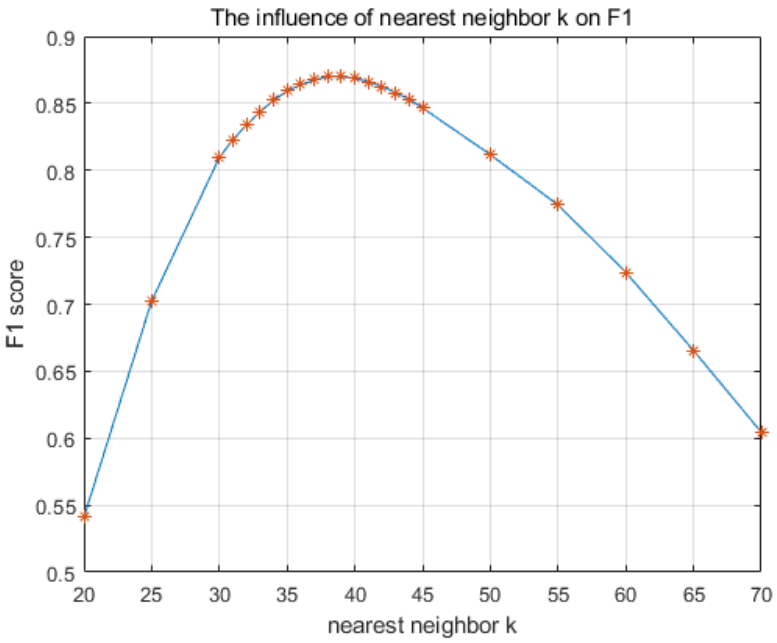

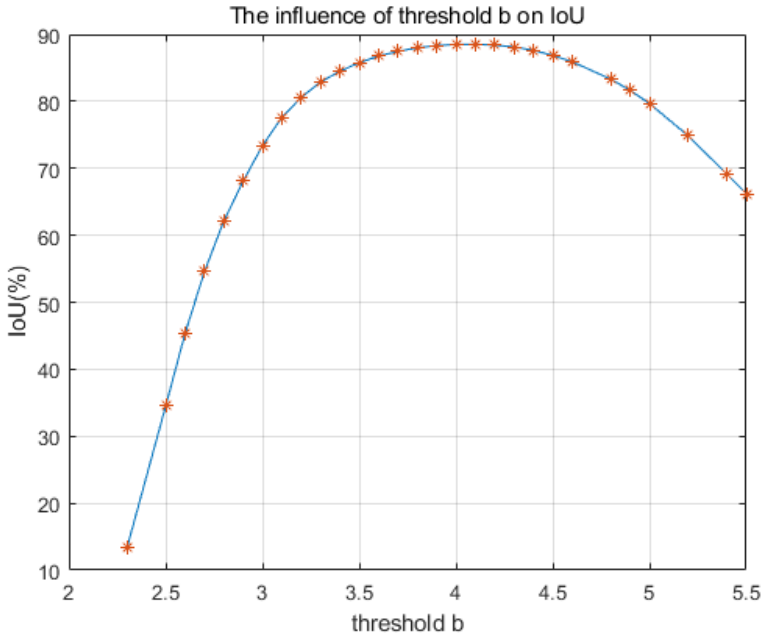

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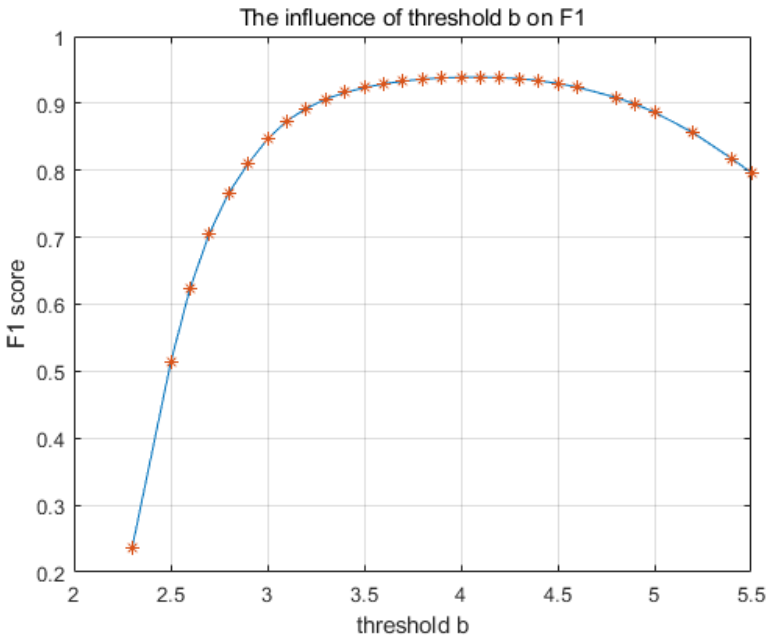

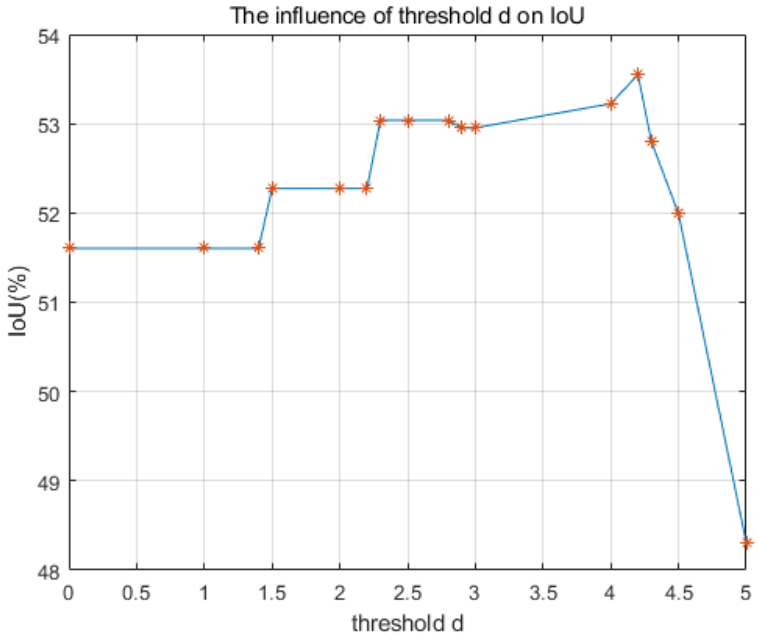
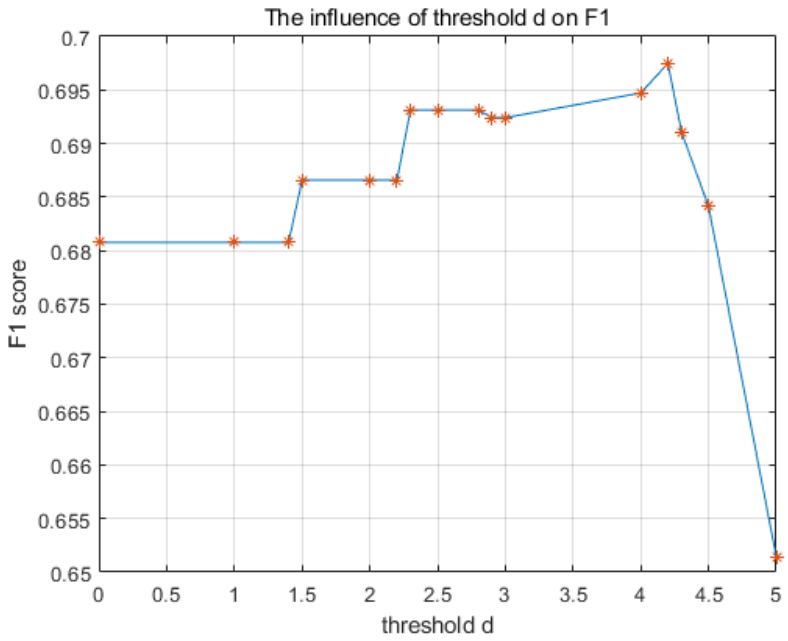
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