1. Introduction

The task is fast motion computing with event-based cameras.

- Event camera
  
  Event-based cameras are bio-inspired sensors that asynchronously report per-pixel intensity changes at each pixel. They are suitable devices for motion estimation because of their low-latency sensing mechanism.

2. Method

- Key ideas
  
  - Outputting the event inlier probability for each event by PointNet, and using only events with higher probabilities
  
  - Training the network in a self-supervised manner by sampling.

- Inference

  - Local event cloud
  
  - Event inlier probability

- Training

  - Local event cloud
  
  - Event inlier probability

3. Experiment

- Setting

  The experiments aimed to confirm the effectiveness of self-supervised learned inlier points within each scene, rather than generalization between sequences, compared with a greedy selection, SOFEA [2]

- Results

<table>
<thead>
<tr>
<th>Scene</th>
<th>Stripes</th>
<th>Rotating bar</th>
<th>HDR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ours (w/o bin)</td>
<td>12.3 ± 6.56</td>
<td>16.9 ± 12.3</td>
<td>30.2 ± 33.7</td>
</tr>
<tr>
<td>Ours (w/bin)</td>
<td>10.8 ± 6.69</td>
<td>17.5 ± 15.4</td>
<td>37.3 ± 48.8</td>
</tr>
</tbody>
</table>

- Future work

  - Test in realistic and complex scenarios

Reference