EFI-Net: Video Frame Interpolation from Fusion of Events and Frames

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Video Frame Interpolation

- Synthesizes non-existent frames by interpolating over a set of sequential frames
Video Frame Interpolation with Events

- Goal: Utilize events for precise temporal frame synthesis
Video Frame Interpolation with Events

- **Motivation**
  - EFI-Net uses events with half spatial resolution in each dimension
EFI-Net Architecture

 البنك CNN_solution which is performed in three phases:

- **Phase I:**
  fuses the data from the intensity images and the event stream

- **Phase II:**
  up-scales the output to the spatial resolution of the conventional camera

- **Phase III:**
  colorizes the intensity image to output a final color frame
Results

Star 150 RPM 60to240

SSM  EFI-Net  CT

DSMB  DAIN  Events
## Results

### UZH data-set

<table>
<thead>
<tr>
<th></th>
<th>Ours</th>
<th>SSM</th>
<th>DAIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSNR</td>
<td>27.56 [db]</td>
<td>22.30 [db]</td>
<td>22.23 [db]</td>
</tr>
</tbody>
</table>

### Our data-set

<table>
<thead>
<tr>
<th></th>
<th>Ours</th>
<th>SSM</th>
<th>DAIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>fps</td>
<td>60to240</td>
<td>30to120</td>
<td>60to240</td>
</tr>
<tr>
<td></td>
<td>28.23 [db]</td>
<td>26.46 [db]</td>
<td>27.04 [db]</td>
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<tr>
<td>PSNR</td>
<td>27.23 [db]</td>
<td>21.92 [db]</td>
<td>21.84 [db]</td>
</tr>
</tbody>
</table>
Thank You!

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