Self-Supervision and Spatial-Sequential Attention Based Loss for Multi-Person Pose Estimation

➢ Background

- Importance & Application
  - Sports analysis
  - Activity recognition
  - Surveillance
  - ...

➢ Proposals

- P1: Resolution irrelevant encoding with inner-block offset
- P2: Gaussian loss mask based spatial attention loss function
- P3: Progressive direction distinction based multi-stage loss function
- P4: Kullback-Leibler divergence based self-supervision loss function

➢ Results

- OKS score and visualization

<table>
<thead>
<tr>
<th>Test dataset</th>
<th>OpenPose</th>
<th>+P1~4</th>
</tr>
</thead>
<tbody>
<tr>
<td>COCO Mini val2014</td>
<td>58.4%</td>
<td>63.9%</td>
</tr>
<tr>
<td>COCO Val2017</td>
<td>57.7%</td>
<td>63.1%</td>
</tr>
<tr>
<td>COCO Test-dev2017</td>
<td>56.6%</td>
<td>62.8%</td>
</tr>
</tbody>
</table>

➢ Conclusion

- The final accuracy is 0.639 while that of conventional work is 0.584
- Improved multi-person pose estimation algorithm’s accuracy with low extra computation complexity