Two Critical Issues of Pedestrian Detection

1. Occlusion as false negative failure
   - Likely to assign a low confidence to an occluded person
   - Divide the prediction confidence by parts, and use it for final prediction

   ![Occlusion Handling Method](image)

2. Hard negatives as false positive failure
   - Use the features in the existing detection task → Likely to assign a low confidence to an occluded person → Use the results of multiple layers!

   ![Hard Negative Handling Method](image)

References


Quantitative Results

- Evaluation metric: log-average miss rate
- All models are trained to be optimized for the allPos setting

<table>
<thead>
<tr>
<th>Model</th>
<th>BaseNet</th>
<th>Part score</th>
<th>Full score</th>
<th>Positive</th>
<th>Negative</th>
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<tr>
<td>SqueezeDet [4]</td>
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<td>80.1</td>
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</tr>
</tbody>
</table>

Detailed architecture

![Detailed architecture](image)

Project Page

http://vision.snu.ac.kr/projects/partgridnet