We have collected and annotated a novel DB that contains TRAFFIC NEAR-MISS INCIDENT scenes.

6,200+ videos,
1,300,000+ images,
7 near-miss/bg categories

Contribution 2
Benchmarking on the NIDB

Semantic TDD (OURS)

<table>
<thead>
<tr>
<th>Task</th>
<th>Ours0</th>
<th>Ours1</th>
<th>Ours2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spatial TDD</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Temporal TDD</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Background fine-tuning</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Near-miss fine-tuning</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Foreground &amp; background</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Extra IDT features</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Recognition task</td>
<td>56.3</td>
<td>58.6</td>
<td>60.0</td>
</tr>
<tr>
<td></td>
<td>46.1</td>
<td>47.4</td>
<td>48.0</td>
</tr>
<tr>
<td>Temporal Detection</td>
<td>63.2</td>
<td>64.5</td>
<td>62.1</td>
</tr>
</tbody>
</table>

Conclusion & Future Work

- The purpose of the DB is to directly understand near-miss scenes for self-driving and ADAS-equipped vehicles
- We are focusing on “traffic accident anticipation” in our on-going work which is annotating additional labels and adaptive loss

On the related works...

Pedestrian detection benchmark
- Caltech
- GM-AIT
- Daimler
- NICTA
- TUD
- INRIA

Autonomous driving benchmark: KITTI
- Optical Flow
- Stereo
- Object Detection
- Road
- Odometry
- Semantic Segmentation

Our Philosophy
“making sure that analysis of traffic near-miss incidents helps prevent collisions”

[Annotation] Risk: {High, Low} Attribute: {Ped., Veh., Cycl.}, and bg

Best on Rec.: Ours1 (TDD+SemFlow+Finetune)
Best on Det.: Ours2 (+IDT feature)