3D OBJECT DETECTION FOR LiDAR AND INSTANCE SEMANTIC SEGMENTATION

Customer
US Tier-1 start-up

Business Need
AI-based Perception System

Solution
- Machine Learning approach for
  - 3D Object Detection for LiDAR
  - Instance Semantic segmentation for traffic Sign detection
  - Object distance/pose estimation

The Impact
- Highly accurate DMS
- Embedded implementation of DMS

The Problem
- Development and optimization of Deep Learning Algorithms for 3D Object Detection for iDAR data and Instance semantic segmentation for Traffic Signs
- Real-time highly accurate object detection algorithms for Automotive perception systems

The Solution
- Development and optimization of Deep Learning Algorithms for 3D Object Detection for iDAR data and Instance semantic segmentation for Traffic Signs
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<table>
<thead>
<tr>
<th>Feature</th>
<th>Accuracy</th>
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<tbody>
<tr>
<td>LiDAR based 3D object detection with features like • distance estimation, • object orientation estimation &amp; • velocity estimation for autonomous vehicles</td>
<td>80~85 %</td>
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<tr>
<td>LiDAR based object tracking &amp; motion forecasting</td>
<td>80~85 %</td>
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<tr>
<td>Automated data generation &amp; augmentation for traffic signs</td>
<td>80~85 %</td>
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<tr>
<td>Instance Semantic segmentation</td>
<td>70~75 %</td>
</tr>
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Data generation & augmentation