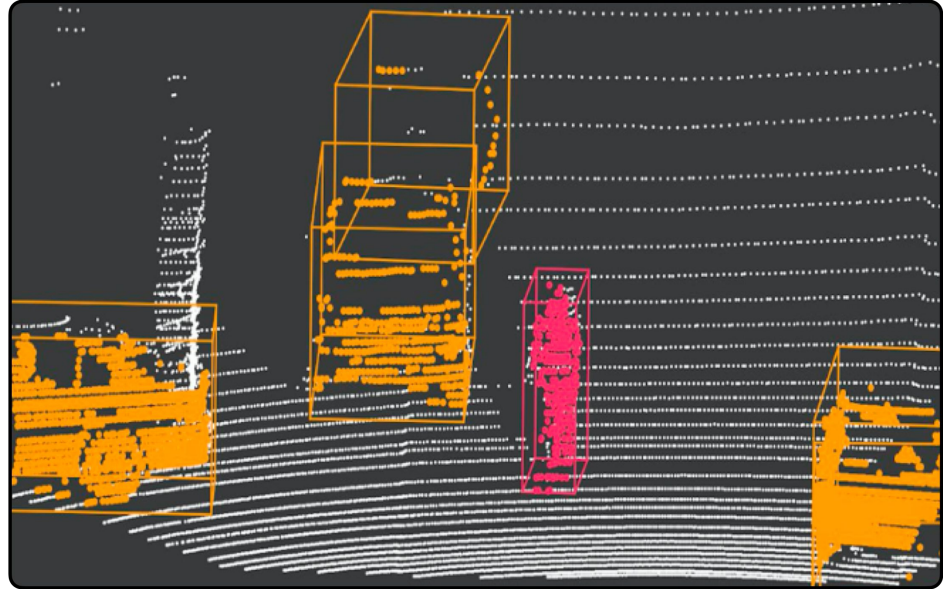


# Goal #1: Multi-Sensor Perception - PointPainting

A method where information inferred from a camera is combined with a LiDAR point cloud to improve performance in 3D object detection.

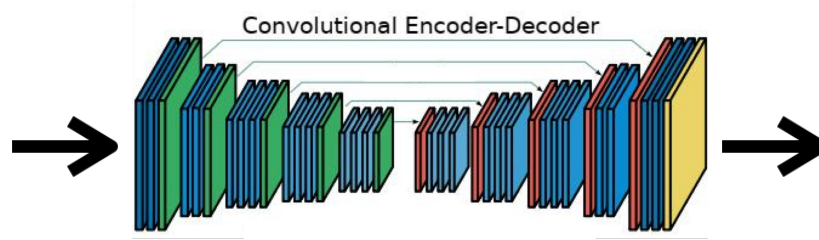


# Step 1: Inferring information from a camera

How is this done?



Camera Image

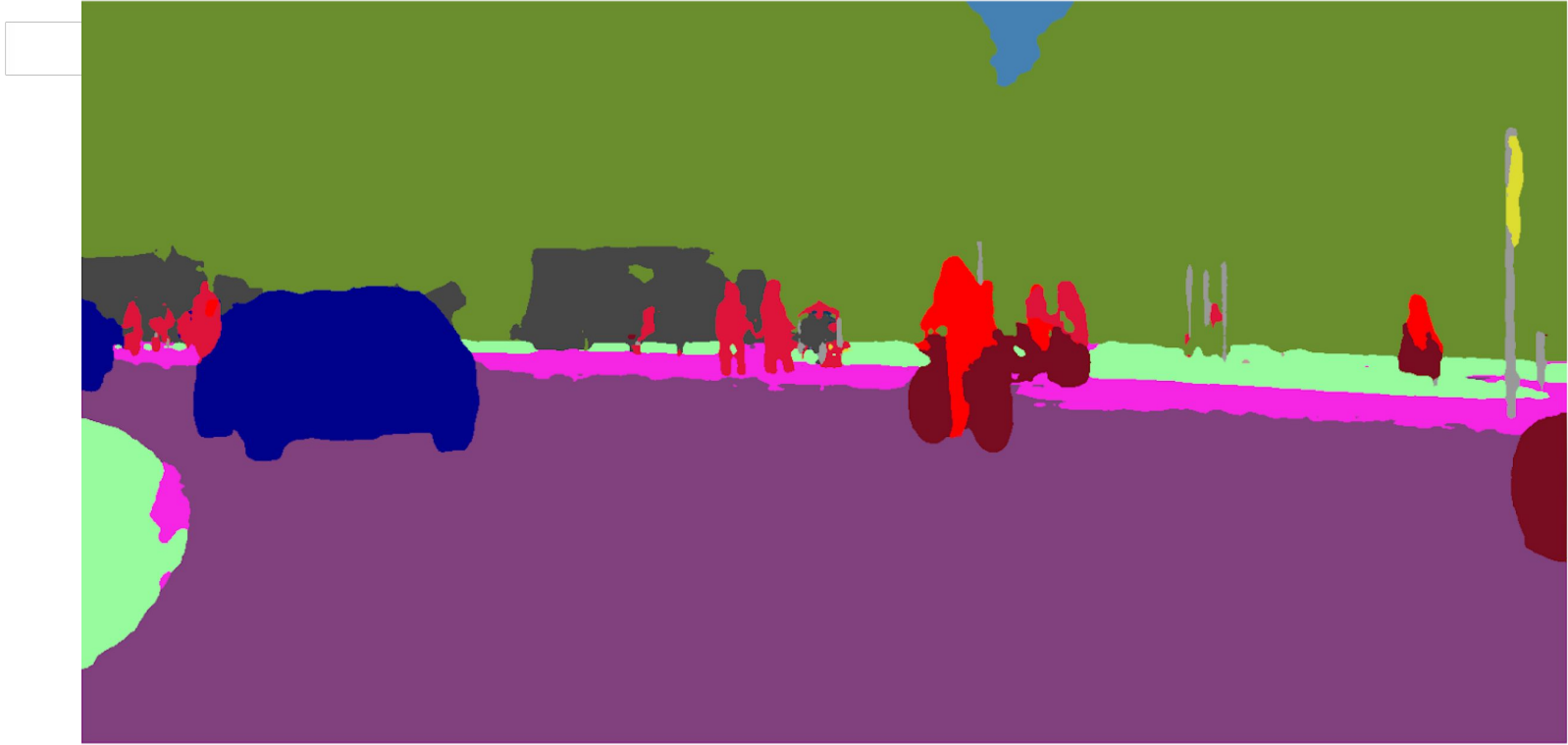


Semantic Segmentation Model

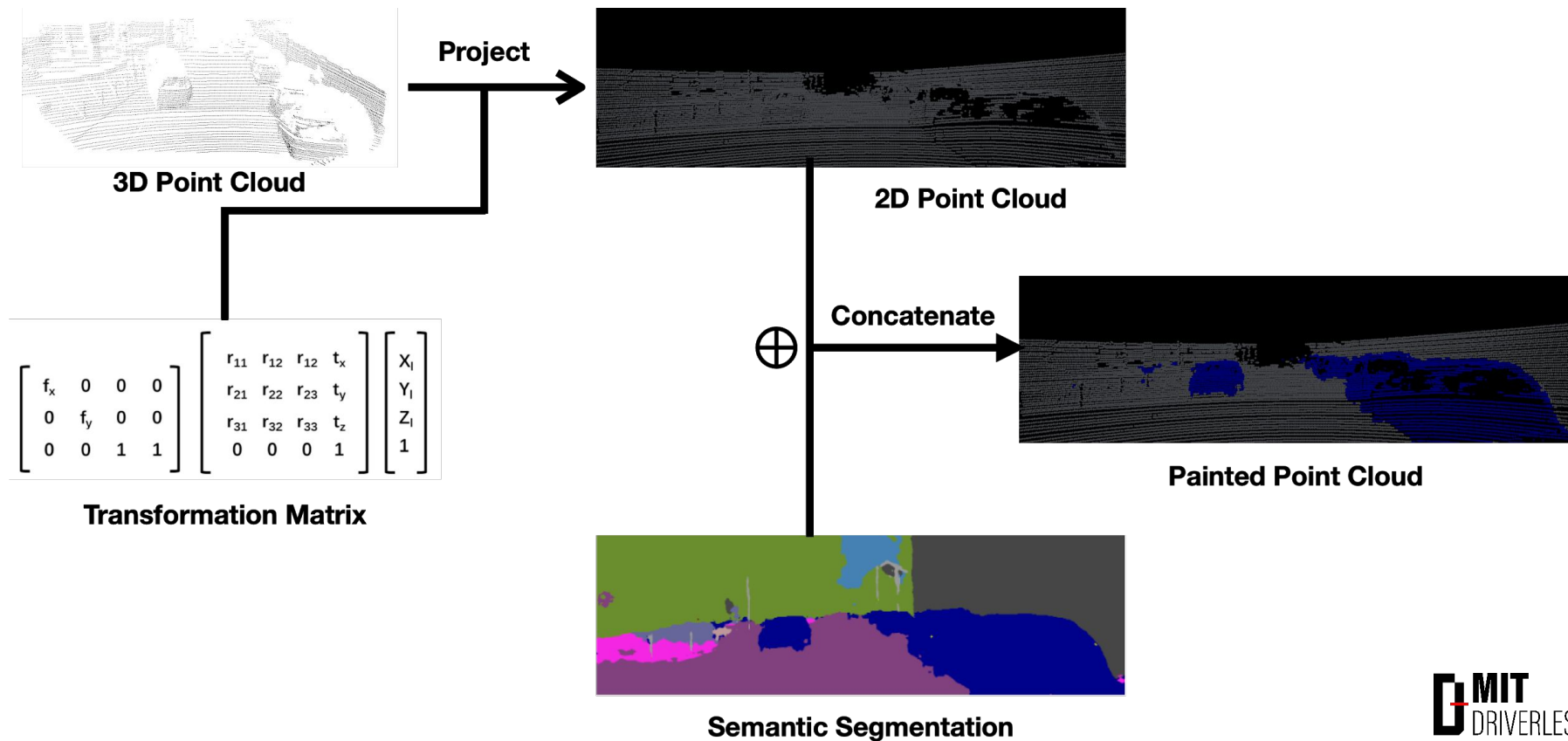


Pixelwise 'class' Scores

# Step 1: Inferring information from a camera



## Step 2: Combine with LiDAR Point Cloud



## Step 2: Combine with LiDAR Point Cloud

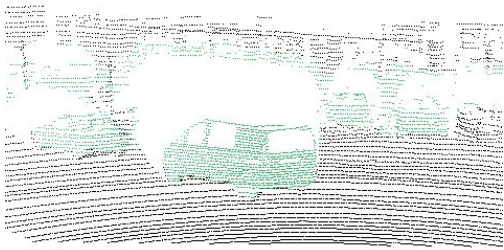
**LiDAR**

**PointPainted**

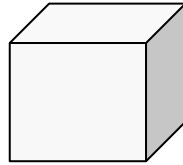
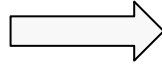
**Camera**

# Step 3: Develop 3D Object Detection Model

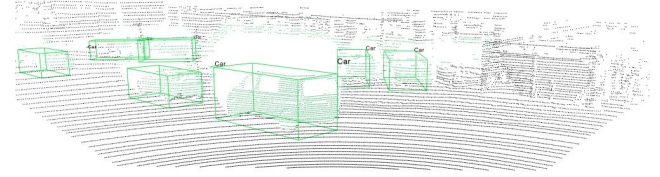
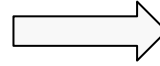
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'Painted' Point Cloud



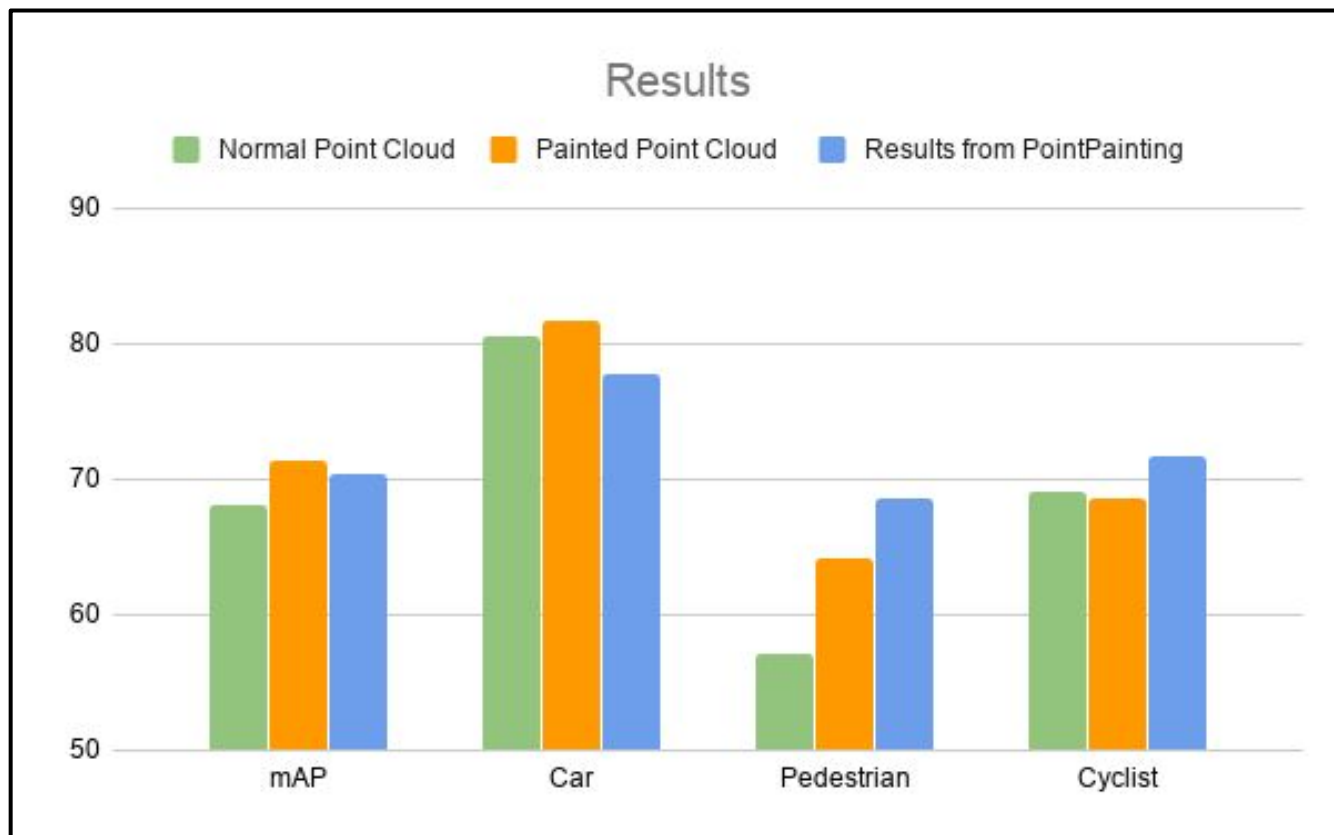
3D Object Detection Model



Detection of objects in point cloud

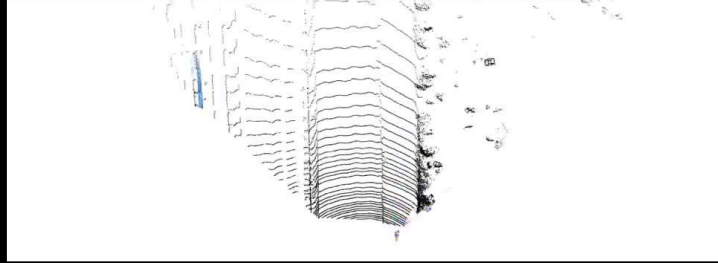
# Results

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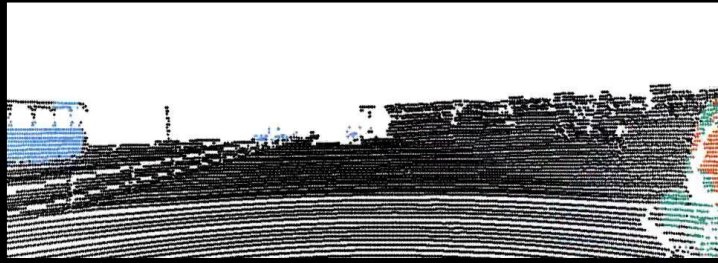


# Conclusion: Putting it all together

**Bird Eye View**



**Range View**



**Camera**

