











Traffic Surveillance Dataset (TSD)


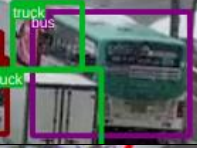



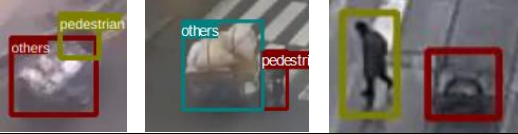
Class Definition

Class Definition

cat_id	category	train_id	id	name	description	example
0	void	255	0	unidentified	unclear or corrupted	
0	void	255	1	others	Any vehicles that are clearly visible but not included in this list	
1	pedestrian	0	2	pedestrian		
2	micromobility	1	3	micromobility	cycles (bike, motorbike) scooter	
3	vehicle	2	4	car	sedan (2-4 seats)	
					SUV (6 seats)	
					van (7-10 seats)	
3	vehicle	3	5	bus	mini bus (30 seats)	
					bus (50 seats)	
3	vehicle	4	6	small truck	pickup	

				(same size as an SUV or van)	small truck	 
					small box truck	 
3	vehicle	5	7	truck	large box truck	  
					trailer truck	
					flatbed truck	 
					dump truck	
					tanker truck	
					concrete truck	 
					garbage truck	  
					crane truck	
					tow truck	  
					fire truck	
					car transporter	  

Labelling Policy

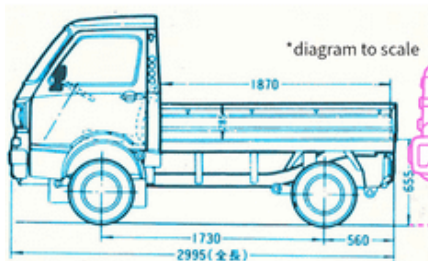
#	Policy	Example
1	Draw bounding boxes tightly around the objects of interest. This helps the model accurately learn the object's shape and location. Avoid unnecessary background or empty space within the bounding box.	
2	Label occluded objects as if they are fully visible. We see better detections when we label occluded objects as if they are fully visible. This will help the model to learn that the car is still there, even though it is not fully visible.	
3	A vehicle is considered within the ROI if the center point of its bounding box lies inside the ROI .	
4	Objects being transported by trucks must be labeled separately .	
5	Traffic signs covering vehicles must be labeled as others .	
6	Objects moving by pedestrian must be labeled as others .	

Questions

1. What is the difference between a “pickup truck” and a “small truck”?

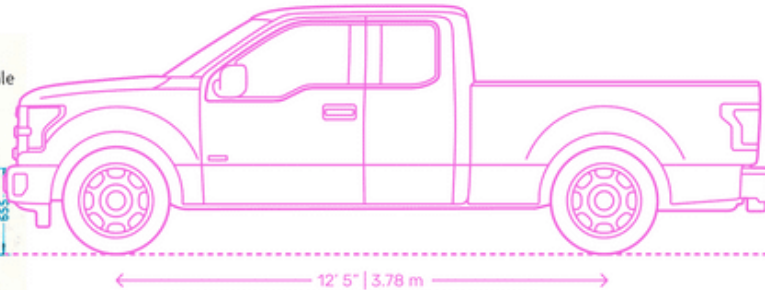
Subaru Sambar

- * only used by businesses to move stuff
- * 90% as much truck bed length as Ford F-150
- * fuel efficient and doesn't destroy roads



Ford F-150

- * used by soccer moms to send kids to school
- * cannot see anyone shorter than 1.3 m tall (1.8 m after lifting)
- * available as Shelby edition with 775 hp and 0-60 mph in 3.4 s



2. Should we also label objects outside of ROI?

- Don't label → modify training pipeline: <https://github.com/ultralytics/ultralytics/issues/16440>

References

1. Types of trucks:

Type of truck



Pickup truck



Refrigerated truck



Dump truck



Semi-trailer truck



Tow truck



Road maintenance truck



Tank truck



Truck crane



Fire truck



Concrete truck



Sweeper truck



Flatbed truck



Garbage truck



Logging truck



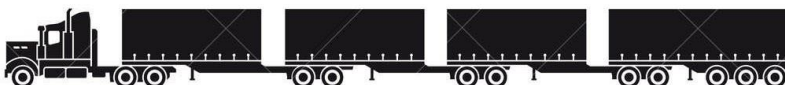
Livestock truck



Car transporter



Mining truck












































Road train



Loader crane

2. Vehicle classification based on weights and sizes:

Class One: 6,000 lbs. or less					
					
Full Size Pickup	Mini Pickup	Minivan	SUV	Utility Van	
Class Two: 6,001 to 10,000 lbs.					
					
Crew Size Pickup	Full Size Pickup	Mini Bus	Minivan	Step Van	Utility Van
Class Three: 10,001 to 14,000 lbs.					
					
City Delivery	Mini Bus	Walk In			
Class Four: 14,001 to 16,000 lbs.					
					
City Delivery	Conventional Van	Landscape Utility	Large Walk In		
Class Five: 16,001 to 19,500 lbs.					
					
Bucket	City Delivery	Large Walk In			
Class Six: 19,501 to 26,000 lbs.					
					
Beverage	Rack	School Bus	Single Axle Van	Stake Body	
Class Seven: 26,001 to 33,000 lbs.					
					
City Transit Bus	Furniture	High Profile Semi	Home Fuel		
					
Medium Semi Tractor	Refuse	Tow			
Class Eight: 33,001 lbs. & over					
					
Cement Mixer	Dump	Fire Truck	Fuel		
					
Heavy Semi Tractor	Refrigerated Van	Semi Sleeper	Tour Bus		

3. Links:

- <https://www.esri.com/arcgis-blog/products/arcgis-pro/geoai/tips-for-labeling-images-for-object-detection-models/>
- https://github.com/waymo-research/waymo-open-dataset/blob/master/docs/labeling_specifications.md