Project: Urban Scene Annotation (Instance Segmentation)

Goal: Provide high-precision instance segmentation for training an object recognition model.

1) Class Definitions

Class Name	Class Definition	Annotation Type	Attributes
CAR	Any sedan, truck, van, or SUV.	Instance Segmentation (Mask)	occluded: yes / no, truncated: yes / no
PEDESTRIAN	Any human present (adults/teenagers/children).	Instance Segmentation (Mask)	occluded: yes / no, truncated: yes / no
ROAD_SURFACE	The drivable portion of the street, curb to curb.	Semantic Segmentation (Mask)	None
TRAFFIC_SIGN	Any permanent street sign.	Bounding Box	occluded: yes / no, truncated: yes / no

2) Segmentation Rules (for Masks and Polygons)

Mask Tightness:

Masks must be pixel-perfect, or as close to pixel-perfect as possible. No background pixels should be included inside the mask.

- The segmentation mask will encompass the entire physical body of any PEDESTRIAN instance, including all worn items (clothing, hats, glasses, backpacks). It will exclude items pushed, pulled (carriages, carts), or loosely held (large bags, umbrellas) that extend significantly from the body.

Occlusion:

If an object is partially blocked or hidden (occluded), or truncated (cut off the by frame), annotate the visible portions only.

- **EXCEPTION:** If a PEDESTRIAN is partially occluded by a CAR, use your best judgment to draw the boundary of the pedestrian's body *as if* the car wasn't there.

Reflections and Shadows:

DO NOT annotate any reflections or shadows. Only annotate the physical object.

- **EXCEPTION:** Use your best judgment to annotate CAR wheels UNLESS they are occluded by another object; If a car wheel is hidden because of shadows or lighting, continue to annotate an approximate

mask for the car's wheels.

Attributes:

`CAR`, `PEDESTRIAN`, and `TRAFFIC_SIGN` annotations must have `occluded` and `truncated` attributes:

- `occluded` **Attribute Rules:**

  - `no` (Object is completely clear)
  - `yes` (Object is partially hidden by another object)

- `truncated` **Attribute Rules:**

  - `no` (Object is not cut off by the frame)
  - `yes` (Object is partially cut off by the frame)

Note: `ROAD_SURFACE` *does not* have a occlusion or truncation attributes.

Ambiguity and Clarity:

Use these ambiguity and clarity rules to avoid guessing in your annotations.

1. If you cannot confidently define the boundary of an object, **DO NOT** annotate it.
2. If an object is *less than 25% visible*, is too ambiguous (looks like a blob or indistinguishable shape) or is very blurry, **DO NOT** annotate it!
3. If an object is less than `32 X 32 pixels` or 1,024 pixels, **DO NOT** annotate it.

3) Bounding Box Rules (Traffic Signs)

Bounding boxes for `TRAFFIC_SIGN` objects must be drawn around the sign face only, excluding the pole or any mounting hardware.

- Do not annotate the back of a `TRAFFIC_SIGN`. Only the sign face.
- Bounding boxes must be as tight as possible around the traffic sign.

4) Image-Level Classification Rules

Each image must be assigned with ONE of the following tags for the entire image: `Daytime_Clear`, `Daytime_Cloudy`, `Daytime_Rainy`, `Nighttime_Clear`, `Nighttime_Cloudy`, `Nighttime_Rainy`