# Thermal Video Annotation Instructions

Overview

- In this task, you will be adding bounding boxes and attributes to vehicles and human bodies for videos.
- Vehicles and human bodies have specific requirements on when to add a bounding box. Make sure you understand the different requirements for these classes before you begin annotation.

Mandatory setup before starting the annotations

1. First of all, change the Custom Jump (Jump Forward / Backward fields) from "1" sec to "0.1" sec. in the tool This make your each jump to next 100ms on the timeline.
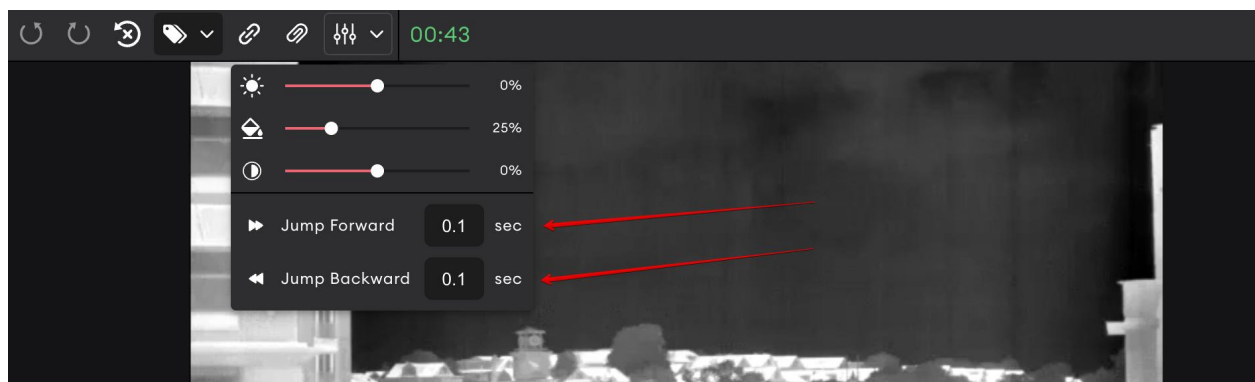

2. Make sure the timeline starts from 00:00:00.000 seconds

3. Select the bounding box and put the first annotation on the desired object.
4. Use "Left Arrow" and "Right Arrow" keys to jump forward and backward on the time line. **DONT USE PLAY/PAUSE** button.
**5.** Annotation should be done each 100ms – That means each 100ms annotator should do a minor change to each annotated instance to create a keyframe on the timeline (even there is nothing to change on the instance, just drag it a little bit to make a change and create a keyframe), see the example below: Each 100ms there is a keyframe created.

Correct example of the annotations:
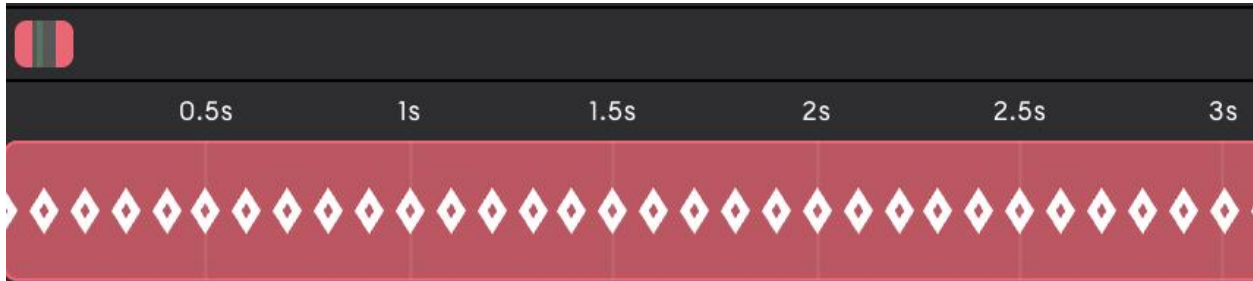
Wrong example of the annotations:

On the example below you can see that couple of frames are missed and not annotated. This gap should be eliminated.
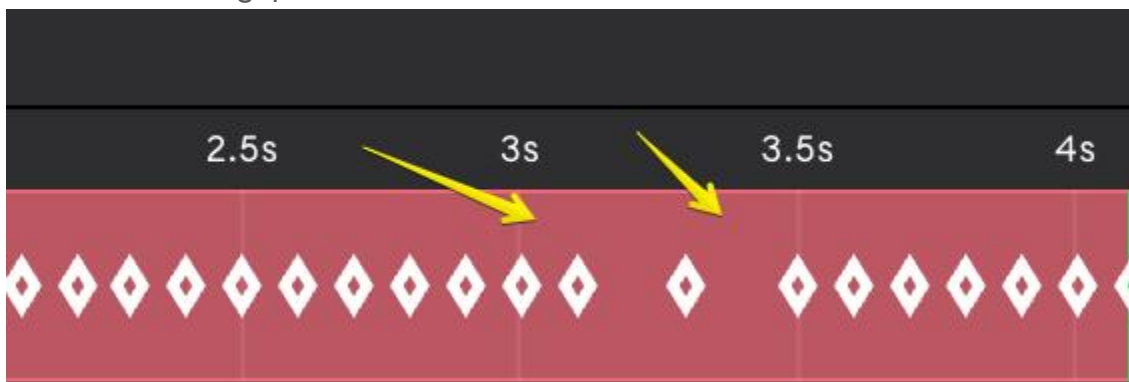
Notes:

- For the same objects use the same bounding box that was generated from the previous frames. **Do not mix the bounding boxes which belong to different objects. Each object should be annotated with unique bounding box.**

Steps

● Review the provided video to locate the targets (human and vehicles)

● Make sure there is only **one bounding box per target:**
   ● One box per Human Body, the minimum size requirement is 10 pixels height. The context of the image, (the image before and after the one being annotated) can be used to determine if a human target is visible. One can rely on changing positions of the white-hot objects to ascertain if the object is a human.
   ● One box per Vehicle, minimum size requirement is 30 pixels diagonally.
The bounding box should represent the whole target, even if the target is just partially

visible. e.g. If only the upper portion of a person is visible, the bounding box is estimated to include the occluded portions (in this example, the legs)

● Make sure **the annotation of a target begins when the target is at least 50% visible. Until an object becomes at least 50% visible, do not draw the box.**

    ● Once the object is at least 50% visible, annotation continues throughout the duration of the video for the target.

    ● Once the object is at least 50% visible, the occlusion attribute is used to indicate how visible the target is.

    ● Annotation continues with the same target ID (i.e. instance) value if the trajectory of the target does not change during a period of full occlusion.

    ● Should the trajectory of the target change during full occlusion or should the target be occluded for more than 3 seconds (use your judgment), the annotation will stop once the target becomes fully occluded and the assigned target ID will not be used again. Should the same target reappear, they will be assigned a new target ID and annotation will start when the target becomes at least 50% visible.

● After drawing the bounding box, **make sure you select the correct attribute(s) for each class.**

N.B. A special attention will be given to the accuracy of the **Vehicle subClassification attribute**. (See the "**Attributes Definitions**" section below.)

Ontology

Classes Definitions

Class	Description	Example
HUMAN_BODY	A single person in the video. A Human_body needs to have at least more than 50% of the body to be visible for annotation to begin.	
VEHICLE_BICYCLE	A small human powered two wheeled vehicle.	
VEHICLE_BOAT	A vessel propelled on water by oars, sails, or an engine.	
VEHICLE_MOTORCYCLE	A small two wheeled motorized vehicle. Includes motorcycles and motor scooters.	

VEHICLE_TRUCK	A large heavy motor vehicle used to transport objects. Also includes pickup trucks and vans.	

N.B : The above table contains a non exhaustive ontology of **VEHICLES**. The entire set is comprised of:

- BICYCLE
- BOAT
- BUS
- CAR (includes SUV)
- MOTORCYCLE
- OTHER
- TRUCK (includes Minivan, Cubevan, and Pickup_truck)

The annotators are expected to use all the resources at their disposal to select the most appropriate vehicle class.

Attributes Definitions

Occlusion : NONE / PARTIAL / FULL

Description	Example
If more than 85% percent of the target is visible, the occlusion attribute should be : **NONE**	The targeted person on the motorcycle is completely visible
Between 15% and 85% of target visibility, the occlusion attribute should be : **PARTIAL**	Only about 50% of the targeted person on the motorcycle is visible
If less than 15% of target is visible, the occlusion should be : **FULL**	

Relation : Carried / Carrying / "Not Carried/Carrying"

Description	Example
Carried: The **Human** is being **Carried** by the scooter. Carrying: **Scooter** is **Carrying** the human Hence the **Relation attribute should be "Carried" for the Human and "Carrying" for the Scooter.**	
Carried: **Cart** is being **Carried** by human Carrying: **Human** is **Carrying** the cart	
Not Carried/Carrying : The **person is not carrying or being carried by an object.** Hence **the Relation should be "Not Carried/Carrying" for the human.**	

Motion : MOVING / STOPPED / NEVER_MOVED

- MOVING: the target is moving.
- STOPPED: the target stopped moving for some time, e.g. a vehicle at a red light.
- NEVER_MOVED: the target never moved in the video.

Posture : Lying / Sitting / Upright

Definition	Example
Upright	
Sitting	
Lying (Includes crawling)	

Pose : Back / Front / Left / Right / Top

Pose can be multiple selections with more than one choice. Select all valid options. Please note that Pose is annotated from the perspective of the vehicle itself.

Definition	Example
Left	
Left;Front;Top (This is a multiple selection of Left, Front, and Top)	

Left;Back;Top (This is a multiple selection of Left, Back, and Top)	
Right	
Right;Front;Top (This is a multiple selection of Right, Front, and Top)	
Right;Back;Top (This choice is multiple selection of Right, Back, and Top)	

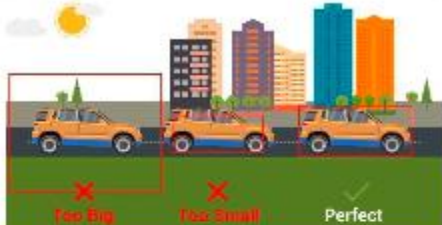|	
Front	
Back	
Top	

Annotation Instructions

BOUNDING BOX Instructions

Instructions:

For each frame, make sure you:

- Use only one box for each Target.
- Scan the whole frame and annotate every single target.
- Understand the subtleties of the requirements before you start the annotation. VEHICLES and HUMAN_BODY have specific bounding box requirements and minimum
- size requirements.
- Center the bounding box around the target and tighten the bounding box.
- Use the zoom function to ensure the targets are tightly annotated.

Illustration:

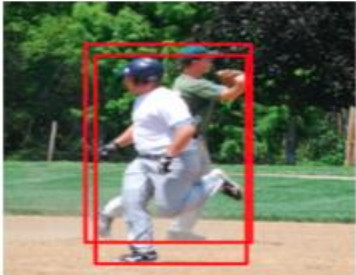| Description	Example
• Draw a VERY tight rectangle around each target.	
• Draw a single rectangle around each target. Do not group targets inside a rectangle.	
• Draw tight rectangles even if the objects are partially occluded. (see the following sections for requirements on occlusion).	

"HUMAN_BODY" Annotation Instructions

Instructions :

When annotating a HUMAN_BODY, make sure you :
- Add a bounding box around human bodies with a 10 pixels height minimum.
- Start drawing the box over humans that are over 50 percent visible, then use the. "Occlusion" attribute to indicate how visible the target is throughout the duration of the video.

Examples :

This **human is more than 50 percent visible** so this **human should be annotated**.	CORRECT!
These **humans should be annotated**, since they are **50% visible**.	
These **should not be annotated** since **the human is less than 50 percent visible**.	

The example on the right **should not be annotated** since the **person is less than 50% visible**.	WRONG!