Thermal Annotation Instructions

CONTENTS

Overview

→ In this task you will be adding bounding boxes and attributes to vehicles, and human bodies for images.

→ Vehicles, and human bodies have specific requirements on when to add a bounding box. Make sure you understand the different requirements for these two classes before you begin annotation.
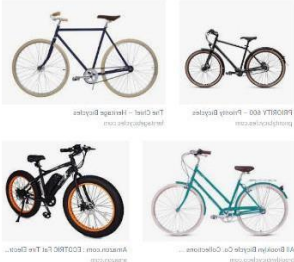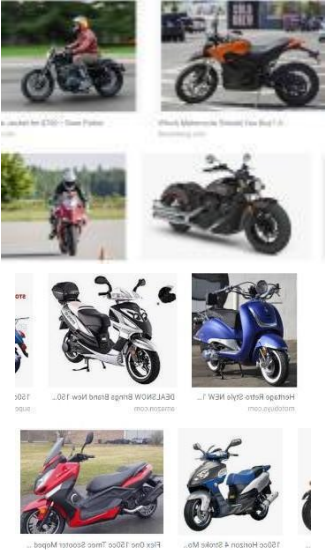
Steps

1. Review the provided image to locate the targets (human, and vehicles).
2. Make sure there is only **one bounding box per target:**
   - One box per Human Body, 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.
3. 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	Unique requirements are defined for the percent of visibility required to annotate humans.	
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.	

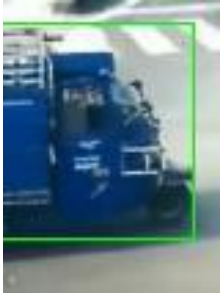|		
VEHICLE_TRUCK	A large heavy motor vehicle used to transport objects. Also includes pickup trucks and vans.	

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

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** **Less than 85% of the targeted truck is cut off by the edge of the photo.**

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**.	

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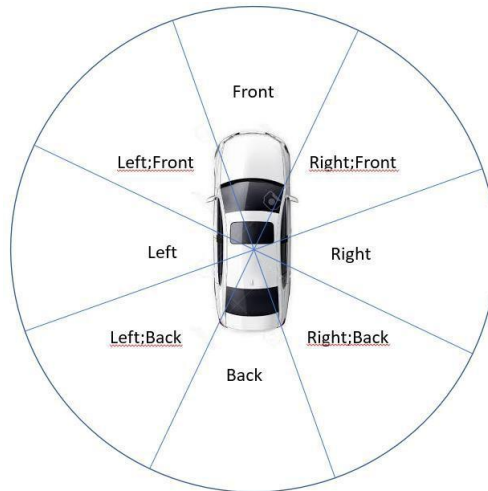
Definition	Example
Left	
Left;Front;Top (This is a multiple selection of Left, Front, and Top)	

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
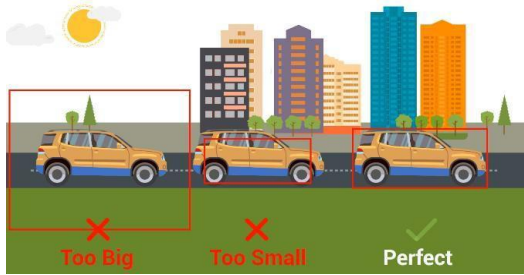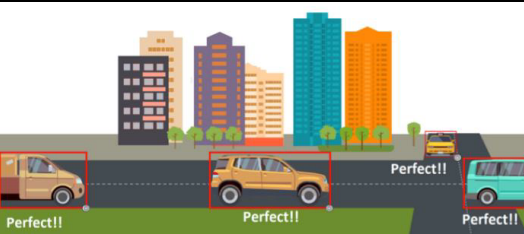
BOUNDING BOX Instructions

Instructions :

For each image, make sure you:

→ Use only one box for each Target.

→ **Scan the whole image 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).	

"VEHICLE" Annotation Instructions

Instructions :

When annotating a VEHICLE, make sure you :

→ Add a bounding box around vehicles with a minimum size of 30 pixels diagonal.

→ **Select the correct vehicle class**.

→ **Only draw the box over vehicles that are over 50 percent visible**.

- ◆ In other words, annotate if at least one of the sides (back, front or side of the car) is 50 percent visible or more. Examples :
  - Annotate if the rear end of the car (trunk) is at least 50% visible.
  - Annotate If the front end of the car (hood) is at least 50% visible.

Examples :

This truck should be annotated. Only the side is visible, and **since the side is more than 50 percent visible**, this vehicle should be annotated.	
This car should be annotated. The side of **the car is more than 50% visible**, therefore this car should be annotated	

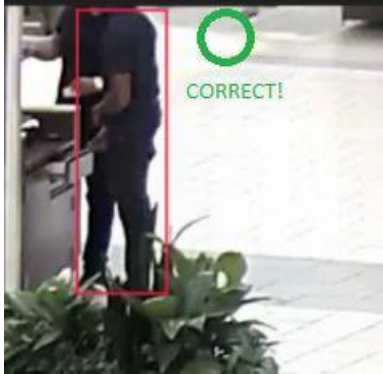|	
This car should be annotated. Since **the back is visible and is around 50 percent visible**, this should be annotated.	
This car should not be annotated. Even though the back of the vehicle is visible in the picture, **only the lights and license plates are visible therefore the vehicle is less than 50% visible.**	
This car should not be annotated. Since only the side of the car is visible and **the side of the car is less than 50 percent visible** this car should not be annotated.	
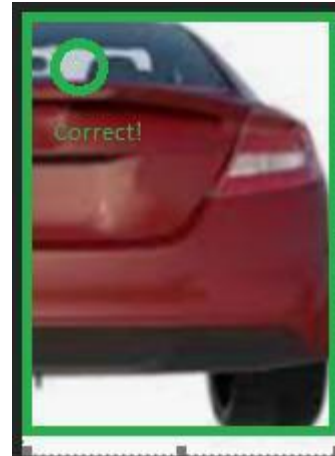
"HUMAN_BODY" Annotation Instructions

Instructions :

When annotating a HUMAN_BODY, make sure you:

➔ Add a bounding box around human bodies with a 10 pixels height minimum.
➔ Annotate the human body :
  ◆ **when both the body (torso) and the legs/leg are visible (more than 80%), if the head is not visible** (either occluded or out of Field Of View) .
  ◆ **when the shoulder(s) and partial arm/arms at least are also visible, if the head is visible.**
➔ **Only annotate the visible portions of the body. Do not annotate the occluded parts of the human body.**

Examples :

The head of this human is not in the field of view and his body is more than 80% visible so this **human should be annotated**.	
This **human should be annotated, since his head, shoulders and arms are visible**. **N.B:** Only include the visible portions of the person in the box. As you see on the right, the legs that are occluded by the table are not boxed since the legs are not visible, so this is correct.	

These **should not be annotated** since **the head of the human is not in the field of view and his body is less than 80% visible**.	
The example on the right **should not be annotated** since the **person's head is in the field of view and her arm(s) are not visible**.	