# Projection

### Module bbox

#### Classes

Class BoundingBox

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Container for bounding boxes

Class variables

Variable loc Type: vec3.vec3

Location of the bounding box from the center of the vehicle

Variable pose Type: numpy.ndarray

Pose of the vehicle

Variable size Type: vec3.vec3

Size of the bounding box

Methods

 $Method \ {\tt get\_point\_world\_RH}$ 

```
def get_point_world_RH(
         self
) -> List[vec3.vec3]
```

Returns the points of the bounding box in world coordinates (righ hand, normalised after transformation).

$$\begin{bmatrix} x_{world} \\ y_{world} \\ z_{world} \\ 1 \end{bmatrix} = {^WT_V} \cdot \begin{bmatrix} x_{vehicle} \\ y_{vehicle} \\ z_{vehicle} \\ 1 \end{bmatrix}$$

Points are normalized into a vec3 object.

### Returns

List[vec3] List of points of the bounding box

Method get\_points

```
def get_points(
    self
) -> List[vec3.vec3]
```

Returns the points of the bounding box

# Returns

 $\mathbf{List[vec3]}$  List of points of the bounding box

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