# Projection

# Module dataset\_reader

#### **Functions**

#### Function get\_bbox

```
def get_bbox(
    datasets_folder: str,
    dataset_name: str,
    vehicle: str,
    frame: int
) -> bbox.BoundingBox
```

Get the bounding box of a vehicle in a frame

# Args

```
vehicle: str Name of the vehicle (e.g. 'V0') frame: int Frame to observe
```

#### Returns

**BoundingBox** Bounding box of the vehicle in the frame containing the transformation matrix of the vehicle in the world frame (left handed)

# Function get\_camera\_matrix

```
def get_camera_matrix(
    file_path: str
) -> numpy.ndarray
```

Get the camera matrix of a camera.

$$k = \begin{pmatrix} 692. & 0. & 692. \\ 0. & 692. & 516. \\ 0. & 0. & 1. \end{pmatrix}$$

### Args

file\_path: str Path to the camera calibration file

#### Returns

```
np.ndarray Camera matrix (3x3)
```

#### Function get\_camera\_pose

```
def get_camera_pose(
    datasets_folder: str,
    dataset_name: str,
    vehicle: str,
```

```
frame: int
) -> numpy.ndarray
```

Get the camera pose of a vehicle in a frame

# Args

 $\textbf{vehicle: str} \ \ Name \ of \ the \ vehicle \ (e.g. \ `V0')$ 

frame : int Frame to observe

# Returns

np.ndarray Transformation matrix from the camera to the vehicle frame (left handed)

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