

# Scene Parsing Dataset

Scene parsing is aimed to provide a large-scale open dataset to promote autonomous driving technologies. The whole dataset will include RGB videos with ten thousands of high resolution images and per pixel annotation, survey-grade dense 3D points with semantic segmentation, stereoscopic video, and panoramic images.



per pixel annotation images



depth images

This document covers data acquisition, class definition, data specification.

## 1. Sensors and Data Acquisition

For the first released dataset, we equipped a mid-size SUV with RIEGL VMX-1HA mobile mapping system [1], which consists of two LiDAR sensors (500 scan line per second, range 420m, field of view 360 degrees), an INS/GNSS unit, and two front cameras (VMX-CS6, 3384 x 2710). Images are captured every one meter.

## 2. Class Definitions

There are totally 26 semantic classes. The class definition is described in Table 1.

Table 1: Class Definitions

Group	Class	Label ID	Color (RGB)	Description
Sky	Sky	17	(70,130,180)	-

Group	Class	Label ID	Color (RGB)	Description
Movable object	Car	33	(0, 0,142)	-
-	Motorcycle	34	(0, 0,230)	Parked without rider
-	Bicycle	35	(119, 11, 32)	Parked without rider
-	Pedestrian	36	(220, 20, 60)	-
-	Rider	37	(255, 0, 0)	Including bicycle, motorcycle, etc.
-	Truck	38	(0, 0, 70)	-
-	Bus	39	(0, 60,100)	-
-	Pedicab	40	(0, 0, 90)	-
Flat	Road	49	(128, 64,128)	-
-	Sidewalk	50	(244, 35,232)	-
Barrier	Traffic Cone	65	(152,251,152)	-
-	Road Piles	66	(180,165,180)	-
-	Fence	67	(190,153,153)	Fence including any holes
Static Object	Traffic Light	81	(250,170, 30)	-
-	Pole	82	(153,153,153)	both horizontal and vertical
-	Traffic Sign	83	(220,220, 0)	-
-	Wall	84	(102,102,156)	The wall near the roadside
-	Trash Can	85	(0, 0,110)	Not included in evaluation
-	Billboard	86	(0, 80,100)	Not included in evaluation
Construction	Building	97	(70, 70, 70)	-
-	Bridge	98	(150,100,100)	Not included in evaluation
-	Tunnel	99	(150,120, 90)	Not included in evaluation
-	Overpass	100	(250,170,160)	-
Nature	Vegetation	113	(107,142, 35)	-
Others	Others	0	(0,0, 0)	Not included in evaluation

### 3. Data Specifications

In the first released dataset, we have 17,062 images with corresponding pixel annotations and depth information. Dataset is used to design algorithms and train models. The train.txt contains the list of these images without the root directory. The name of each image is made of the time stamp and camera index (e.g., 170908\_06190754\_Camera\_5). The training directory structure is as follows:

```
train_image/                // training image root
```

```
|-- image
```

```
|   |-- Record014
```

```
|   |   |-- Camera 5
```

```
|   |   |   |-- 170908_061910754_Camera_5.jpg
```

```
|   |   |   |-- ...
```

```
|   |   |   |--170908_061912275_Camera_5.jpg
```

```
|   |   |-- Camera 6
```

```
|   |   |   |-- 170908_061910754_Camera_6.jpg
```

```
|   |   |   |-- ...
```

```
|   |-- :
```

```
|   |-- Record031
```

```
|   |   |-- Camera 5
```

```
|   |   |   |-- ...
```

```
train_depth/                // training depth root
```

```
|-- depth

|   |-- Record014

|   |   |-- Camera 5

|   |   |   |-- 170908_061910754_Camera_5.png

|   |   |   |-- ...

|   |   |   |--170908_061912275_Camera_5.png

|   |   |-- Camera 6

|   |   |   |-- 170908_061910754_Camera_6.png

|   |   |   |-- ...

|   |-- :

|   |-- Record031

|   |   |-- Camera 5

|   |   |   |-- ...
```

```
train_label/           // training label root
```

```
|-- image

|   |-- Record014

|   |   |-- Camera 5

|   |   |   |-- 170908_061910754_Camera_5.png

|   |   |   |-- ...

|   |   |   |--170908_061912275_Camera_5.png

|   |   |-- Camera 6

|   |   |   |-- 170908_061910754_Camera_5.png
```

| | | |-- ...

| |-- :

| |-- Record031

| | |-- Camera 5

| | | |-- ...

## 4. Data usage instructions

This period is not open online use of [scene parsing] data sets . We allow developers to download complete training data set ( 17,062 images with corresponding pixel annotations and depth information ) , is used to design algorithms and train models. With the amount of data is increasing gradually, Will increase functions can online use of data. Coming soon