DL Course Project

Simultaneous Depth and Object Detection

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1 Git and Project Dependencies

1.1 Git

This Project is open source and is published on Github. You can watch it using this link.

You can use the following bash command for cloning this project:

```
$ git clone https://github.com/MohammadAminAlamalhoda/Deep−Object
```

If you don't have `git` installed on your device, you can use the following bash command:

- Linux

  ```
  $ sudo apt−get install git
  ```

- MacOS

  MacOS already have git installed, check its version using bash command below:

  ```
  $ git −−version
  ```

  If you uninstalled it, you can install it using `brew`:

  ```
  $ brew install git
  ```

- Windows

  You can download source code of git and makeinstall it using this link.

1.2 Project Dependencies

This project needs the following stuff in order to be compiled successfully.

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It is noteworthy to mention that Matlab isn't open source and you should buy this product for using this, but you can ask your academic institute or university to provide you a license. You can also use GNU Octave which is an opensource scientific programming language and supports all the Matlab modules and scripts.

2 Datas

2.1 Converting Datas

We converted the datas which were in the .mat format to the .png for better RAM management. This way it is possible to load the images directly from the hard drive in each itteration.

2.2 Loading Datas

Figure 1 shows a sample from the dataset.

(a) Image No 1   (b) Depth No 1   (c) Label No 1

(d) Image No 2   (e) Depth No 2   (f) Label No 2

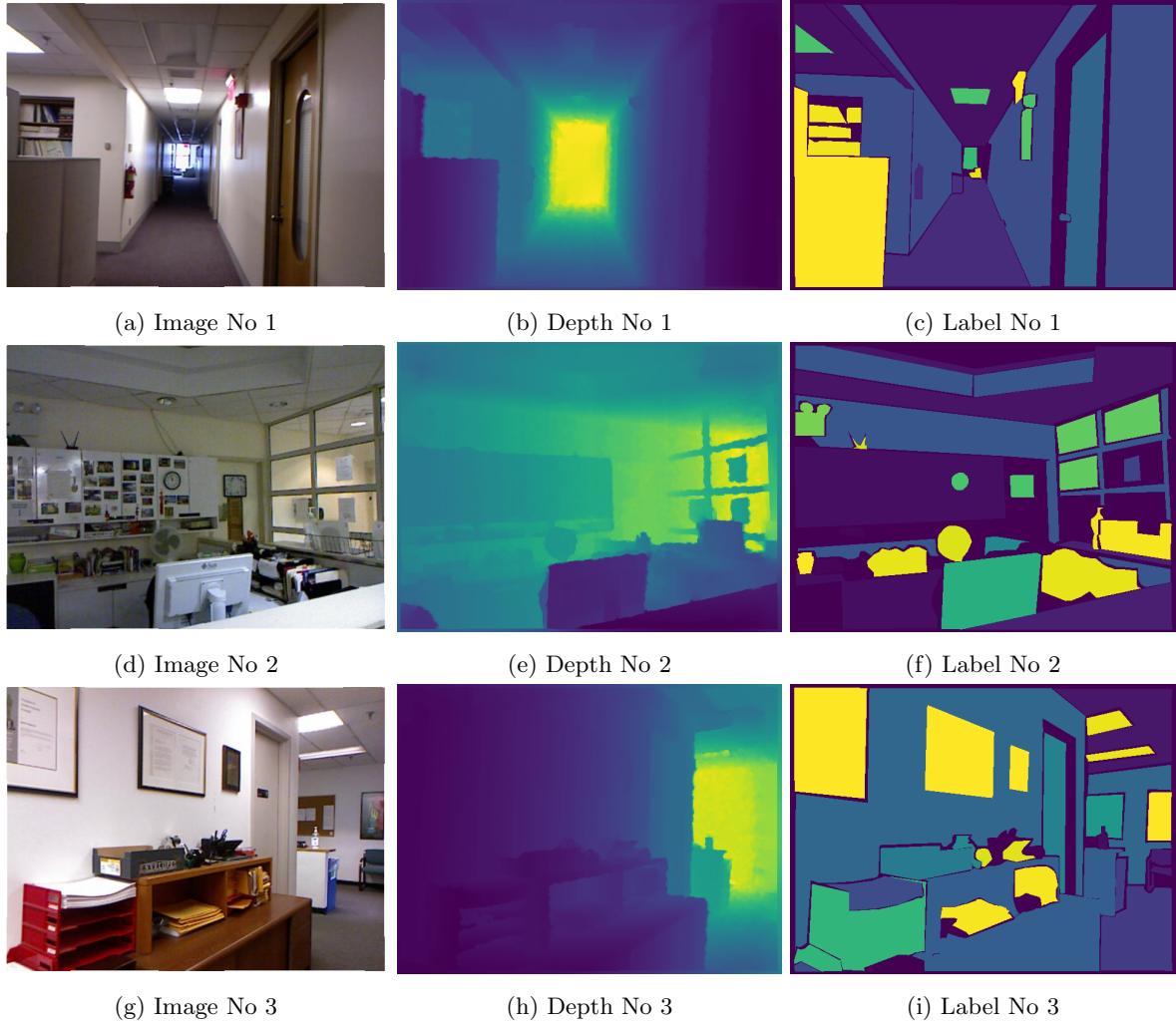(g) Image No 3   (h) Depth No 3   (i) Label No 3

Figure 1: Some Sample Images from The Dataset

As can be seen in Figure 1, dataset contains image, label, and depth.

2.3   Data Augmentation

We augmented the datas by resizing to 640, random cropping an 640×640 square, and random horizontal flip.
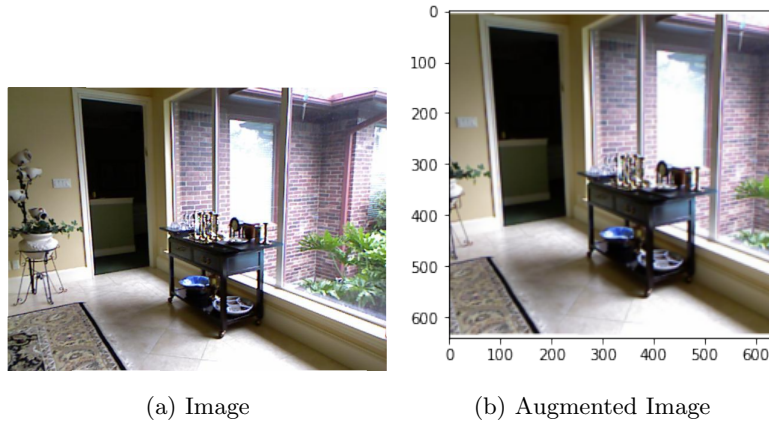Some of the Augmented Images are plotted in Figure 2.

(a) Image   (b) Augmented Image

Figure 2: An Image and its Augmented Version