



Title: README for Setup Mask RCNN

Document Number: 190l-1

CTI One Corporation

Table 1a. Document History

2022-05-2	Establish this document, document archive: /media/harry/easystore/backup-2020-2-15/CTI/3proejcts /3-8-smart-tech/3-8-4-CTI/3-8-4-6-products/AIV200/190- robots-health/190l-mask-rcnn	YY
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Table 1b. Testing and Release Approval Form

2022-05-2	Test Status: and Release Status: approved for release by HL	Pending for testing and approval

Table 2. References

Number	Name and URL	Note
1.	Mask R-CNN for Object Detection and Segmentation https://github.com/buseyaren/Installation-MaskRCNN/ tree/master/Mask_RCNN https://github.com/buseyaren/Installation-MaskRCNN	Installation
2.	Mask R-CNN for Object Detection and Segmentation	



	https://github.com/matterport/Mask_RCNN	
3.	matterport/Mask_RCNN/releases https://github.com/matterport/Mask_RCNN/releases	

Table 3. Prerequisite

Software Prerequisite No.	Description and Version	Note
1.	Ubuntu 18.04	
2.	Python version 3.6	On Ubuntu
3.	Anaconda version 4.7.12	On Ubuntu
Hardware Prerequisite No.	Description and Version	
1.	To be added	



1. Setup The Mask RCNN Environment

1.1. Create the Anaconda environment;

```
conda create -n maskrcnn python=3.6.12
```

1.2. Activate the Anaconda environment;

```
conda activate maskrcnn
```

1.3. Clone the GitHub folder;

```
git clone https://github.com/matterport/Mask_RCNN.git
```

1.4. Modify Mask_RCNN/requirements.txt

```
tensorflow==1.14.0
```

```
keras==2.0.5
```

```
opencv-python
```

```
h5py==2.10.0
```

1.5. Install the required Python package;

```
cd Mask_RCNN
```

```
pip install -r requirements.txt
```

1.6. Download the pre-trained model;

```
https://github.com/matterport/Mask\_RCNN/releases
```

Download mask_rcnn_balloon.h5 from Mask_RCNN_2.1 Assets and mask_rcnn_coco.h5 from Mask_RCNN_2.0 Assets.

Copy the files to the “Mask_RCNN” folder.

1.7. Run setup.py;

```
python setup.py install
```

1.8. Loading the pycocotools module;



```
pip install git+https://github.com/philferriere/cocoapi.git#subdirectory=PythonAPI
```

2. Run Mask R-CNN

2.1. Activate the Anaconda environment;

```
conda activate maskrcnn
```

2.2. Run Jupyter Notebook

```
jupyter notebook
```

2.3. Access <http://localhost:8888/tree/> by a browser

<http://localhost:8888/tree/>

2.4. Navigate to samples folder on the browser



Figure 1. samples folder on Jupyter Notebook



2.5. Open demo.ipynb



Figure 2. demo.ipynb on Jupyter Notebook

2.6. Select a code cell and push the “Run” button

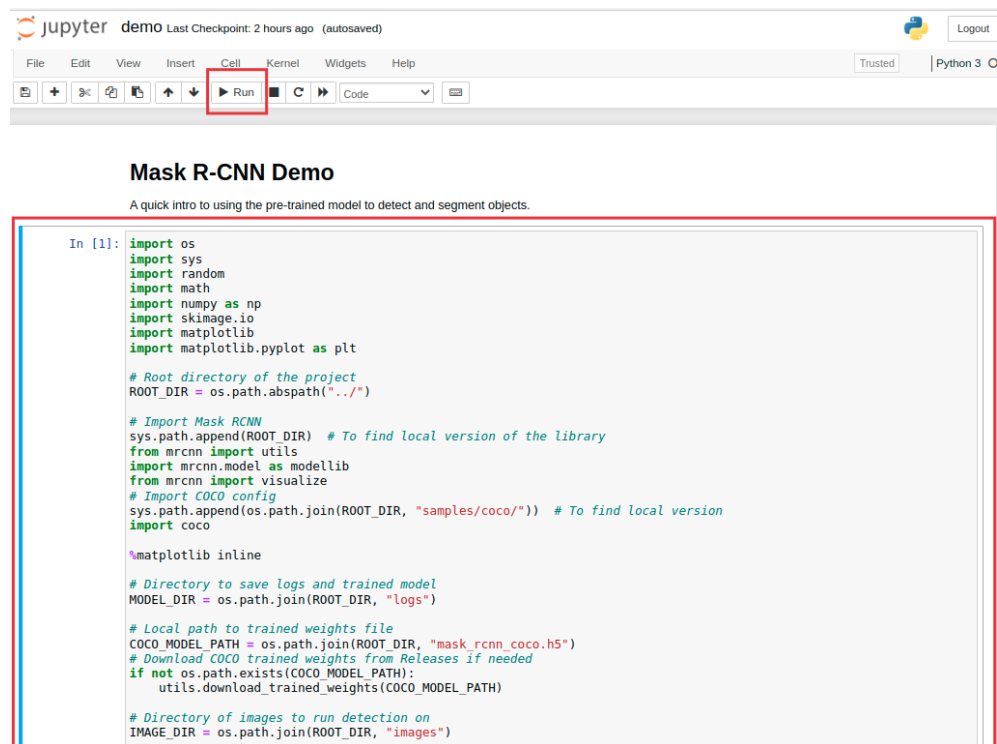


Figure 3. The first code cell on Jupyter Notebook



2.7. Run all code cells

The image is randomly chosen and the demo example is computed.

Run Object Detection

```
In [15]: # Load a random image from the images folder
file_names = next(os.walk(IMAGE_DIR))[2]
image = skimage.io.imread(os.path.join(IMAGE_DIR, random.choice(file_names)))

# Run detection
results = model.detect([image], verbose=1)

# Visualize results
r = results[0]
visualize.display_instances(image, r['rois'], r['masks'], r['class_ids'],
                           class_names, r['scores'])
```

Processing 1 images					
image	shape: (640, 480, 3)	min: 0.00000	max: 255.00000	uint8	
molded_images	shape: (1, 1024, 1024, 3)	min: -123.70000	max: 151.10000	float64	
image metas	shape: (1, 93)	min: 0.00000	max: 1024.00000	float64	
anchors	shape: (1, 261888, 4)	min: -0.35390	max: 1.29134	float32	



Figure 4. The result of on Jupyter Notebook

(END)