MASK RCNN

What is Mask RCNN

- Faster RCNN (object detection with bounding boxes) + Masks
- Developed by the Facebook AI Research (FAIR)
- read more on it here https://arxiv.org/pdf/1703.06870.pdf
- watch a video on it https://www.youtube.com/watch?v=g7z4mkfRjI4

Overview on how to install

- Step 1: create a conda virtual environment with python 3.6
- Step 2: install the dependencies
- Step 3: Clone the Mask_RCNN repo
- Step 4: install pycocotools
- Step 5: download the pre-trained weights
- Step 6: Test it

Step 1 - Create a conda virtual environment

we will be using Anaconda with python 3.6.

If you don't have Anaconda, follow this tutorial

```
https://www.youtube.com/watch?v=T8wK5loXkXg
```

- run this command in a CMD window

```
conda create -n MaskRCNN python=3.6 pip
```

Step 2 - Install the Dependencies

- place the `requirements.txt` in your `cwdir`
- https://github.com/markjay4k/Mask-RCNN-series/blob/master/requirements.txt
- run these commands
  - `actvitate MaskRCNN`
  - `pip install -r requirements.txt`
- NOTE: we're installing these (tf-gpu requires some pre-reqs)
  - `numpy, scipy, cython, h5py, Pillow, scikit-image, tensorflow-gpu==1.5, keras, jupyter`

Step 3 - Clone the Mask RCNN Repo

- Run this command

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

Step 4 - Install pycocotools

- NOTE: pycocotools requires Visual C++ 2015 Build Tools
- download here if needed https://www.visualstudio.com/downloads/#build-tools-for-visual-studio-2017
- clone this repo

```
git clone https://github.com/philferriere/cocoapi.git
```

- use pip to install pycocotools

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

Step 5 - Download the Pre-trained Weights

- Go here https://github.com/matterport/Mask_RCNN/releases
- download the `mask_rcnn_coco.h5` file
- place the file in the `Mask_RCNN` directory

Step 6 - Let's Test it!

- open up the demo.ipynb and run it