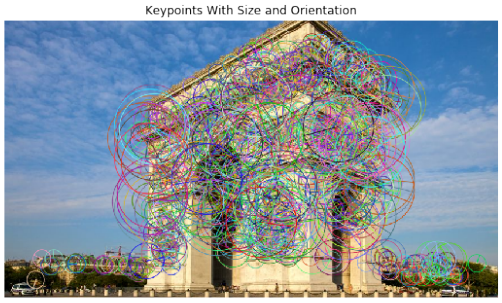
preliminary

April 16, 2019

Find Keypoints

In [2]:
```
import cv2
import numpy as np
import copy
import matplotlib.pyplot as plt
plt.figure(figsize = (20,20))

training_image = cv2.imread('adt.jpg')
training_image = cv2.cvtColor(training_image, cv2.COLOR_BGR2RGB)
training_gray = cv2.cvtColor(training_image, cv2.COLOR_RGB2GRAY)

orb = cv2.ORB_create(1000, 2.0)
#orb = cv2.ORB_create(200, 2.0)

# Find the keypoints in the gray scale training image and compute their ORB descriptor
# The None parameter is needed to indicate that we are not using a mask.
keypoints, descriptor = orb.detectAndCompute(training_gray, None)

# Create copies of the training image to draw our keypoints on
keyp_without_size = copy.copy(training_image)
keyp_with_size = copy.copy(training_image)

# Draw the keypoints without size or orientation on one copy of the training image
cv2.drawKeypoints(training_image, keypoints, keyp_without_size, color = (0, 255, 0))

# Draw the keypoints with size and orientation on the other copy of the training image
cv2.drawKeypoints(training_image, keypoints, keyp_with_size, flags = cv2.DRAW_MATCHES_

# Display the image with the keypoints without size or orientation
plt.subplot(121)
plt.axis('off')
plt.title('Keypoints Without Size or Orientation')
plt.imshow(keyp_without_size)

# Display the image with the keypoints with size and orientation
plt.subplot(122)
```

```
plt.axis('off')
plt.title('Keypoints With Size and Orientation')
plt.imshow(keyp_with_size)
plt.show()

# Print the number of keypoints detected
print("\nNumber of keypoints Detected: ", len(keypoints))
```




```
Number of keypoints Detected:  878
```