OSINT Challenge NahamCon 2023

I recently took part in a CTF as part of the NahamCon 2023 virtual conference. There were a variety of challenges including, but not limited to, Web, Binary Exploitation, Reverse Engineering, Cryptography and Forensics.

There were also GEOSINT (Geospatial Intelligence) challenges which involves identifying a location based on information derived from an analysis of images. Below is how I worked through one of those challenges.

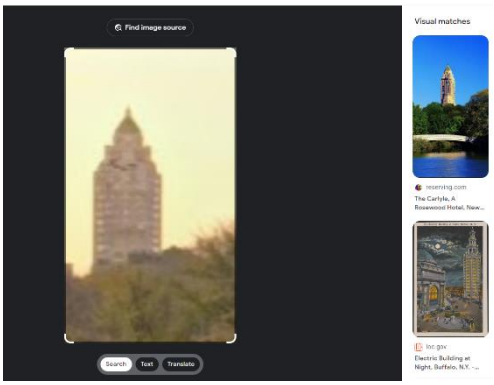
These challenges require using OSINT (Open Source Intelligence) to find the answer. OSINT is the collection and analysis of publicly available information to answer a specific question.

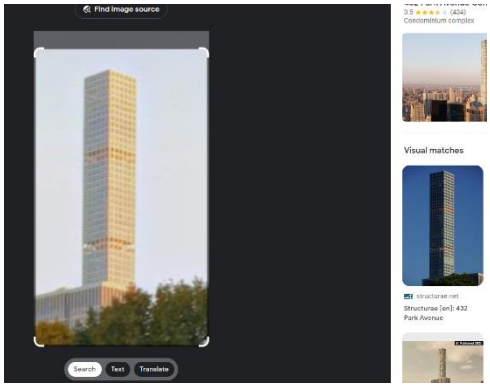
On to the challenge. First of all we're given a URL that directs to the pictures for the challenges. Clicking on Chall3 gives this image:

It's a 360 image so first things first, lets take a look around.

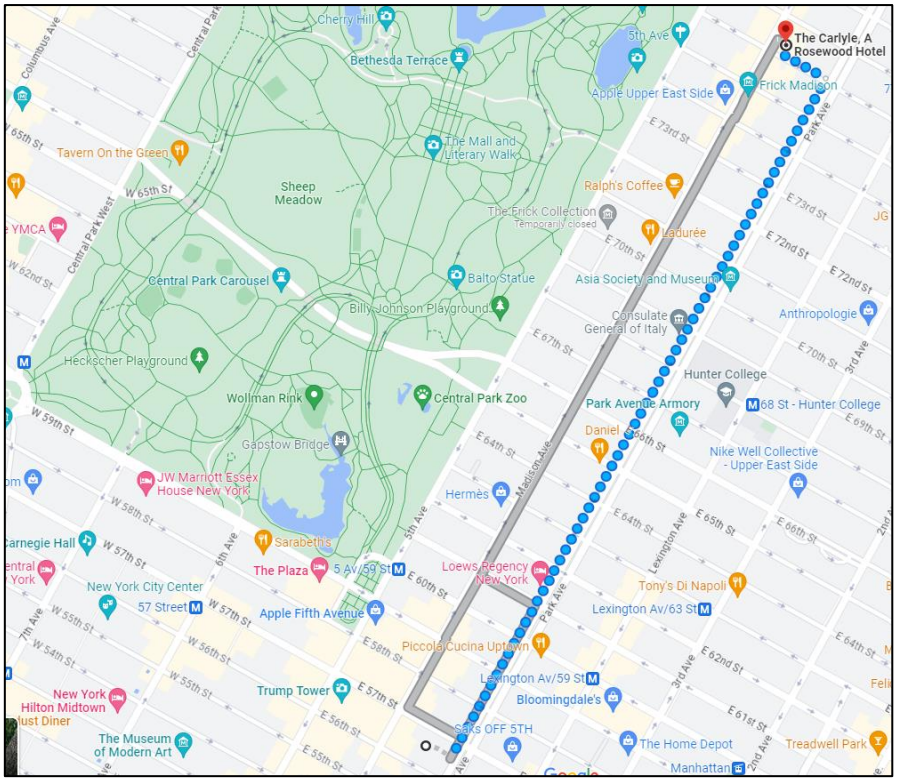
There's a few buildings in the background. That's a good place to start for establishing a location. The picture is not the clearest but the buildings are quite distinctive so hopefully a reverse image search will provide some results.

There are different search engines and sometimes it's necessary to try different ones or reduce or enlarge the area of picture you're looking at to get a useful result. For this one I was able to identify some of the buildings with Google Images.

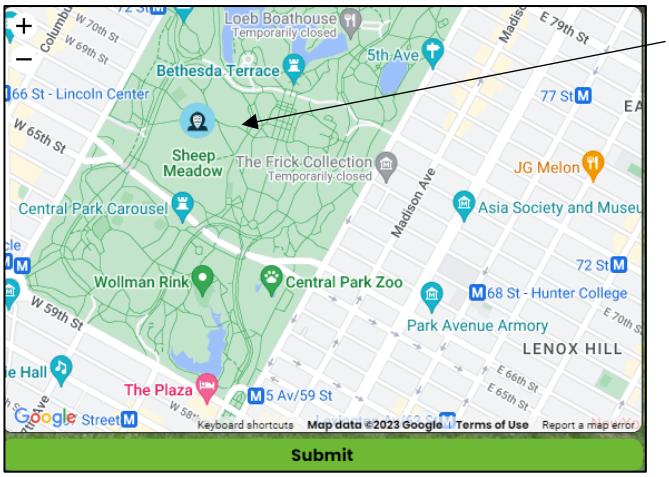




So from the search results we can see that one of the buildings is The Carlyle Hotel in New York and another building is 432 Park Avenue. So, the image was taken from somewhere both these buildings are visible. Let's check what park type areas are in the area on Google Maps.



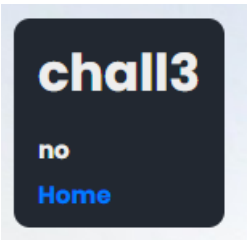
Google Maps shows us that these buildings are in view of the rather large area of Central Park.



To submit an answer for the challenge you use the small map in the bottom right and navigate to where you believe is the correct location, drop a pin then click on submit.

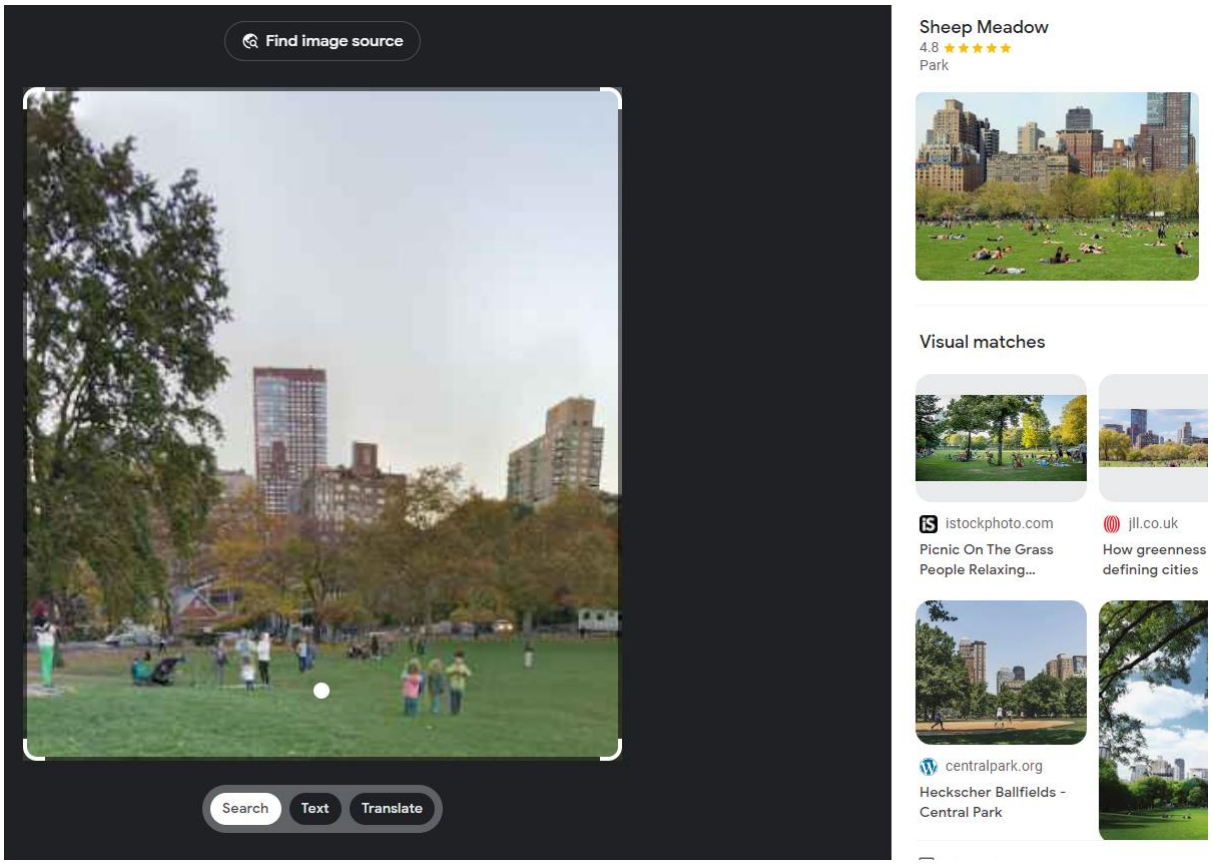
So I use the map to zoom in to a point where I can drop my pin on Central Park and click submit.

Aaaannd…….the answer is ‘no’.



So now there are two options. Drop the pin in varying locations in the park and submit until it’s the right location or narrow it down a bit. Let’s narrow it down some.

Back to Google images to reverse image search a building on the other side of the park.



So this time we don't get building name or location but it does show an image taken from Sheep Meadow which looks like it might be something to go off. We've already tried somewhere in the Sheep Meadow area of Central Park so we need to be much more specific than that.

Lets go back to the challenge image. What else is there that we can use?

If we zoom in a bit closer in the direction of the building we've just been looking at we can see there is a small structure. A reverse image search does not produce results for this. Well, it does but nothing in Central Park.

Back to Google Maps. We know from the original buildings we located that the place the image was taken is somewhere between 57th and 76th streets. Let's have a look at what can be seen from the other side of the park between those streets.

After following the street view along Central Park West and looking down each street I established the tall building I'd been looking for could be see around 68th street. Now we know where three of the buildings are and that it's around Sheep Meadow so back to the map view and lets take a look what we can see from somewhere within that triangle.

I drop the pin on the edge of Sheep Meadow on the side closer to the road to see what can be seen. Clicking to follow the path using street view to see what can be seen I pass a building that appears to the same as the one in the challenge photo. To view it in the challenge we had to zoom in so now know that we are in the right area but we need to move further away towards the other side of the park.

Back to the google Maps, drop the pin on the other side of Sheep Meadow across from where we saw the small gable roofed building. Follow the path and look round at the view for each section and eventually come across this view which is very similar to the challenge picture but further away.

From the 360 view in the challenge picture we know the image was taken from nearer to the middle of the grassy area which we can't drop a pin on in Google Maps so it's now just a matter of judging how far into the meadow the location is.

Drop the pin further into the field in the direction of the view that matches the original image and the challenge is completed.