Road Plan and milestones for NEA

A graph with text and numbers

Description automatically generated with medium confidence

Project Providence

End goal: A program the takes an image input, analyses it and returns a guess of where in the world that image was taken.

Sub sections:

1. Take an image input.
2. Analyse the image (Nural Net Stuff).
3. Return a coordinate guess.

1

Give up on PIL and Pillow – Switch to Opencv

Run a small test following a tutorial for “Image Classification with Neural Networks in Python”

That didn’t go to plan, start a Udemy course on machine learning and become better versed in tensorflow

2

I will need a database of geotagged images to train the model on,

MWH14: H. Mousselly-Sergieh, D. Watzinger, B. Huber, M. Döller, E. Egyed-Zsigmond, H. Kosch, World-wide scale geotagged image dataset for automatic image annotation and reverse geotagging, Proceedings of ACM MMSys 2014, March 19 - March 21, 2014, Singapore, Singapore.

3

Overview

Premise

This project is primarily intended to function as a tool for data gathering and enrichment in the field of open source intelligence (OSI). OSI or OSINT is the practice of collecting and analyzing information from publicly available sources to gain insights, make informed decisions, and support various activities, such as research, analysis, investigations, and security assessments. More specifically, this project is intended for military OSINT data gathering with a particular focus on image geolocation and possible future gaols of identifying military hardware in the field.

Why collect this data?

At first glance it may seem rather poignant to collect and geolocate random images of warzones and military bases, initially there appears to be little to no value in a selfie made by a soldier or a general posting an image of his transport aircraft, however these small entries are all part of the modern world of Big Data. With hundreds upon thousands of these minute snapshots of the warzone, a complete and in depth understanding of situation can be created, especially with the use of further algorithms and neural networks to process the findings. An easy example would be a soldier taking a photo of his position in the combat area, a shockingly common occurrence with Russian conscripts in the currently ongoing Russo-Ukrainian war, the image is geolocated and artillery fire is directed to that position. A more indirect example would be tracking the sightings of enemy aircraft, if there is a particularly high sighting density around an airports airspace, it could be assumed that a mission will take place from that airport, as well as what the goal of the mission will be.

Integration with other systems

One possible integration of this system would be using an API to collect images from various social media platforms to then geolocate, store, and analyse the images. Possible use of internet scraping tools is under consideration, however the best software comes with a price tag not compatible with the scale of this project

Interview

Jack Hodge: Overall Positive perception,

Sanitise inputs / find original

Link with mapping software

Safety Tool

Self driving cars

Interest with but no direct experience

Humanitarian uses as a recommendation

Euan: Expressed interest, focus on how much data can be collected for training and use

Find a tourist attraction.

Doxing

Different civilian and military

Large data requirement

Regional specific models !!!

General purpose internet scraping tools

Google lens

12/01/2024

My goals for today are to:

Find a suitable database for training the algorithm

Write a proof of concept program to analyse basics aspects of an image e.g. colour values