Image recognition and Google Earth - Google Earth Blog

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The last few years have seen major advances in computer artificial intelligence (AI). One area where AI is starting to show practical use is in imagery recognition. Google Earth and Street View imagery combined with image recognition has a wide range of possible applications. We have in the past had a look at Terrapattern, an experimental search engine for aerial and satellite imagery. They are adding new areas with time, so be sure to keep an eye on them.

We recently came across this story about a Caltech researcher that is helping the city of Los Angeles to count its trees with the help of a combination of Google Earth imagery and Street View. In this case they are trying to not only count individual trees but also identify the species.

The idea of using imagery for surveys of vegetation is of course far from new. Google Earth Engine, for example, is designed around such large scale analysis. When you wish to simply determine whether there is vegetation cover or possibly the overall health of the vegetation, a much better option than Google Earth imagery is to use false colour imagery – and satellites are typically designed with this in mind.

Another example of people using image recognition on Street View imagery is this one about identifying fire-hydrants and mentioned in that article is a project using Street View to study gentrification, which uses historical Street View to measure changes in buildings over time.

There is also this project, which uses Street View to geolocate an image. You could potentially take a photo with your mobile phone camera and the system could tell you where you were with accuracy similar to GPS. At present, this sort of thing is often done by crowd-sourcing rather than an automated system. The potential for automated systems has both potential benefits and serious privacy concerns.

Google itself applies some image recognition to Street View. The best known is identifying licence plates and faces, which are blurred for privacy reasons. However, it also reads house numbers and various street signs, and this information is used to improve Google Maps.

If Google were to add infrared to their Street View cameras, maybe it would make it easier to distinguish between faces of people who need privacy and faces of statues who need publicity.

Having infrared Street View has other uses and [has been thought of already](#).

About Timothy Whitehead

Timothy has been using Google Earth since 2004 when it was still called Keyhole before it was renamed Google Earth in 2005 and has been a huge fan ever since. He is a programmer working for [Red Wing Aerobatx](#) and lives in Cape Town, South Africa.