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Wednesday 18th June 2008

Computer scientists scour your holiday photos

11:49AM, Wednesday 18th June 2008



Hundreds of thousands of images on Flickr are being used to teach a program to determine the geographic location of an image, simply by looking at it.

"Estimating geographic information from an image is an excellent, difficult high-level [computer vision](#) problem whose time has come," explains a [paper written by James Hays and Alexei Efros of Carnegie Mellon](#)

University.

The program attempts to mimic the way that humans can deduce the location of an image by searching for visual clues, such as similarities to pictures or locations they have seen previously.

On seeing a coastal scene, for example, humans can instantly work out that the image is not taken at a land-locked location and rule out the vast majority of options.

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To recreate this ability the pair scoured the internet for GPS-tagged images, as well as those that were assigned location-based keywords, such as on Flickr.

By taking a combination of both set of metadata a more accurate array of images could be created and supplied to the program.

"We found that by taking the intersection of these groups, images with both GPS coordinates and geographic keywords, we greatly increased the

likelihood of finding accurately geolocated and visually useful data. People may geo-tag images of their cats, but they're less likely to label that image with "New York City" at the same time," explains the paper, due to be published in the Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition.

Using these techniques, the program was able to guess the right location within 200km, 16% of the time. This may seem like a low success rate, but it is nearly 20 times what random guessing would achieve, and extremely accurate considering the huge complexity of the problem.

The software could see use in automatic tagging applications, which could add geographic data to new images simply by analysing them against existing data.

Matthew Sparkes

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