

# Oranges and lemons: Spot the difference

March 7 2013

---



Credit: AI-generated image ([disclaimer](#))

A computer recognition system that is 99% accurate can identify different fruits and vegetables, even the particular strain of apples or plums, for instance. Research to be published in the *International Journal of Applied Pattern Recognition* in March explains how challenging this issue has been until now and shows how it could be used in agricultural science and perhaps to improve efficiency in the growing and food industries as well as at the supermarket.

Shiv Ram Dubey and Anand Singh Jalal of GLA University in Mathura, India, have developed an automated image processing system that not only quickly distinguishes between oranges and lemons but can spot different strains of pear, melon, apple and plum. Such a system, given its high accuracy, could be used for sorting and packing different [fruits and vegetables](#). However, it could also be used to speed up supermarket customer checkout where similar but different strains are on sale at different prices, without the need to barcode or otherwise label individual products.

The program developed by the team is trained with a set of images of known fruit and vegetables so that the [image analysis software](#) can assign common features to a database. The process involves photographing an image of the different fruits, "removing" the background and then analyzing the image left. They have thus trained their program with 15 different fruits and vegetables including various types of apple, onions, potatoes, oranges, limes, kiwi fruit, and different melons. Tests showed that 99 times out of 100 the software could correctly identify the product in question regardless of whether there were one or more items in the photograph and regardless of differences in lighting.

The team hopes to next extend the system to detect the signs of disease, bruising or other damage, which would allow products of unsalable quality to be removed before they reach the checkout.

**More information:** "Species and variety detection of fruits and vegetables from images" in *Int. J. Applied Pattern Recognition*, 2013, 1, 108-126. [www.inderscience.com/info/inar...icle.php?artid=52343](http://www.inderscience.com/info/inar...icle.php?artid=52343)

Provided by Inderscience Publishers

Citation: Oranges and lemons: Spot the difference (2013, March 7) retrieved 17 July 2024 from <https://phys.org/news/2013-03-oranges-lemons-difference.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.