

# Hybrid Human Faces Could Populate Google Street View

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From left to right: the original photo, a photo selected for swapping certain features, and the resulting hybrid.

Due to privacy concerns, Google has been blurring the faces of people caught on Google Street View cameras. But rather than blurring people's faces and diminishing the reality of the scene, researchers have demonstrated a new way to automatically depersonalize the faces - by creating hybrids.

The new face-swapping technology, developed by Neeraj Kumar and colleagues at Columbia University in New York, finds faces in a photograph and swaps their features with those from a library of faces, such as picture-sharing sites like Flickr.com. Their software then automatically chooses one or more suitable faces for swapping the eyes, nose, and mouth out of the original image, resulting in a facial composite.

As a final step, to weed out inferior replacements, the system ranks the resulting images according to how well the hybrid face fits the surrounding region in the original photograph, and chooses the highest ranked replacement for insertion.

Unlike other programs, the new technique is fully automatic, and generates plausible results across a variety of lighting conditions, viewpoints, and skin tones. The researchers performed a case study in which they asked participants to identify real and fake faces from a set. They found that people are almost equally likely to classify real facial images and the hybrid facial images as being real. Of 12 people tested, 58% of the hybrid face images were misidentified as real, and 75% of real images were correctly marked real.

Besides de-identifying faces, the same technology could be used by photographers for creating an optimal group photograph from several similar shots. As the researchers explain, the "burst" mode found on most cameras can take several images at once. Then, an automatic face replacement technique could be applied to swap blinking or frowning faces with better faces taken from the other images. The result would be a single composite image with all the best faces.

More information on the researchers' face-swapping technique can be found at [tinyurl.com/6ehog5](http://tinyurl.com/6ehog5).

via: [New Scientist](#)

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