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New algorithm can help spot faked photos before they go viral

Some fakes are not so subtle
John Lund/Blend Images

By **Chris Baraniuk**

Pictures speak a thousand words – and faked photographs spin awfully tall tales. Take the widely circulated image of Emma Gonzalez, a teenager who survived the Parkland school shooting in Florida earlier this year.

Gonzalez, who had been campaigning for gun control, was pictured tearing up the US constitution. Except the photo had originally shown her ripping a shooting practice target.

Such "spliced" images, where two bits of visual content are merged in a convincing

and often misleading way, are rife online. But an experimental algorithm could help detect such fakery before it spreads.

A team at the University of California, Berkeley, and Carnegie Mellon University has developed an algorithm that can spot inconsistency in a doctored image. The system was trained on 400,000 photos on the image hosting service Flickr. It was the image metadata, known as EXIF data and which can record things such as camera and lens make and flash settings, that helped the system learn how to tell apart imagery from two different origins.

The principle was simple: digital imagery must be determined by the particular technologies or processes behind it, and the effects those processes have should generally be consistent across a whole picture. In other words, if you learn which brushes produce which brushstrokes, you can tell if a portrait has been painted with more than one brush.

Neal Krawetz, the computer scientist behind FotoForensics, an online tool that checks for evidence of doctoring in photographs, is impressed with the work. However, he questions how useful the system would be when detecting fakery in photographs that have already been uploaded to social media. This is because most social media sites alter or compress images in ways that could make the team's algorithm less accurate.

But social media firms wanting to catch fakers in the act could perhaps use such a system themselves before this happens, says Brooke Binkowski, a journalist at fact-checking site Snopes. Though she thinks humans would probably need to be involved in order to weed out algorithmic errors.

Read more: Altered image ratings tell you just how fake photos are

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