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Do You See What I See?

An Interview with **Michael Brown**, Computer Scientist, York University
Vision: Science to Applications (VISTA)

Usually when we think about cameras, we think that we push a button and it records the scene, or the light, or the environment. But actually there's a lot of things going on. The world really doesn't have any colours in it. Colour is a perceptual thing, so the world has electromagnetic radiation.

So what I'm interested in is modeling how the physical environment gets turned into an image, and in particular how we take things like electromagnetic radiation and wavelengths, and turn them into these images that we see on consumer cameras. We think of things as being red, green, and blue, but there's actually quite a bit of processing that takes place to make that image that we see.

How does your research look at camera phones?

We're used to just taking a photo, and you upload it to Instagram, you upload it onto Facebook, and you don't really care so much about the accuracy of the colours. Another thing that's interesting is you probably notice if you use a phone and your friend uses a different phone, and you image the exact same thing, the colours are slightly different. But that's a problem, because let's say now I want to use my phone and an app to do something like skin cancer detection. Now it's a real issue if every phone is doing it's own sort of processing to make the colours look better. So in this case, we really need the phone to act as an instrument or a scientific imaging device, and that's what I'm interested in doing.

