

Are Photographers Superfluous? The Autonomous Camera

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Abstract

Once upon a time, photography was a true art. The skilful arrangement of image composition, the accurate illumination and the particular palette, let alone the technical process behind the image deserved elaborate knowledge and year-long training and practice. Nowadays, millions of images are captured every day without the consideration of exposure, the musing on the effect of focal length, aperture, shutter speed or ISO. On top of that, even more images are captured by machines – not necessarily for the human eye, but to be read again by machines.

With my background as a photographer using analogue processes and large format cameras in my three year training, I keep pondering on the development of the medium in the days in which every one – human, animal or robot – is able to take correctly exposed and focused images in full-auto mode. Therefore I propose with this paper, that an intelligent apparatus might soon replace the image-taking human being.

The Superfluous Photographer in Auto-mode

To observe the end of photography is more of a platitude, because this statement has been made for years, yet the snapping continues without ceasing. [1] Most of the resulting images nonetheless are unlikely to ever be seen, some will be deleted or simply lost, become unreadable after the next update, or they will disappear without being missed. The essence of digital photography is itself transient, since these photos exist only as long as you look at them, they are generated by the imaging software instantly just to dissolve again as bits in the stream of data then, and they manifest themselves only for a moment. Conventional practices such as printing

secure those fleeting impressions for the long-term, but to transfer digital data on to photographic paper or celluloid is a transmutative act into a different state of matter.

With the actual image being gone, the authenticity of the creator becomes arguable. The concept of an automated photographer is not a fancy idea or a futuristic invention but a very reasonable notion, merging the possibilities of image-capturing and recognition. One could even suggest that non-intelligent photography-machines were already invented with the Photomaton.

Postponing the Decisive Moment

The ‘decisive moment,’ as postulated by Henri Cartier-Bresson, serves as a catchphrase for professional photographers to describe their craft, finding exactly the right adjustments and timing for each picture. [2] Photography is for him “the simultaneous recognition, in a fraction of a second, of the significance of an event as well as of a precise organization of forms which give that event its proper expression.” [3]

Since the framing of the shot constitutes the essential idea of a compelling image similar to the decisive moment, the prospect of finding another perspective retroactively seems propitious and sombre at the same time. Recent developments such as plenoptic cameras, also known as lightfield photography, enable the photographer to decide retrospectively on focus and the depth-of-field. Analogously, postponing the perfect framing, while shooting a 360° image in high resolution, one can subsequently choose any aspired angle. So-called smart cameras have arrived already in the market, eg. the Insta360 Pro, which can record movies or stills in a 360° sphere and frame the final image according to simple markers, put into the software viewer. [4]

The Intelligent Camera

The technical history of photography shows plenty of inventions to simplify the act of image-taking by automating certain stages in the process. The approach remained always the same, streamlining the technique to free the person behind the lens from any obstacles, with shutter priority, aperture priority, program mode or autofocus. Today's techniques allow retrospective decisions. High dynamic imaging is made possible by intentionally over- and underexposing the same picture, weighing the different light values into an image and allowing the recovery of unseen details in bright and dark areas. This demonstrates even more capability than the electronic photo detectors of the uncompressed images in RAW format and allows to recover unseen details in bright and dark areas.

'Intelligent' cameras can delay the release of the shutter until the presumed subject is in focus – or even more. A decade ago, Sony introduced the smile detection algorithm in certain cameras to the effect that all portraits were made with happy faces. However, the intensities of smiles could be adjusted by the photographer. [5]

The ubiquity of cameras at any time of day in every corner of the world results surprisingly in hardly anything happening unnoticed. But not only the arbitrary activities of anyone will be recorded, so will our surroundings be documented for future generations. In times of unrest and war, these documents can come handy – when the dust settles, an architectural site which lies in ruins could be reconstructed only with the aggregate of the many existing photographs. This restoration would not necessarily depend on a professional photogrammetric assessment. The mass of images from all angles could suffice such as in the recent example of Palmyra [6].

The Autonomous Photographers

Based on the observations of the state-of-the-art, we can only imagine what will be the next technical achievement to facilitate and automate photography, considering all the industrial advances in image recognition.

Surrounded by surveillance cameras, the individual photographic apparatus might soon become superfluous, at least for selfies and other

concepts to record the proof of an individual's happiness at a certain location.

The public spaces around us, cities and crowded places all over the world, are pervasively furnished with surveillance cameras which act as autonomous photographers, framing and recognising faces, following people's movements, and filling databases. Since these devices point in every direction to catch perpetual glimpses of us, we could demand to capture us on our holidays and deliver the images right to our email account, associated with our facial recognition profile. With pre-sets for stylistic elements such as basic rules for composition and colour, these postcards from the omnipresent observer could console us in our loss of independency and privacy.

References

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Biography

With her background in applied photography, media artist Elke Reinhuber has experienced a wide range of cameras. While being fascinated but also scared by the omnipresent lenses which are pointing at each and everyone, she is curious to explore expanded photography such as stereoscopic imaging, photogrammetry, and further aspects of re-

coding light and other electromagnetic radiation, even beyond the visible spectrum. Elke teaches currently at the School of Art, Design and Media at NTU, Singapore. Her artwork was presented internationally.