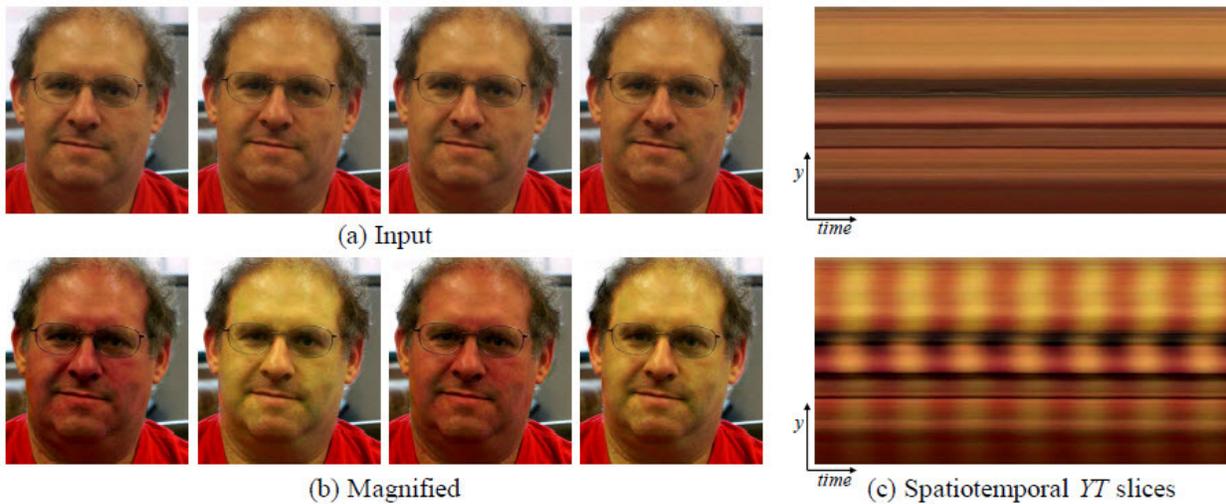


CAMERA FOR DIAGNOSING PATIENTS



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An example of using our Eu Video Magnification framework for visualizing the human pulse. (a) Four frames from the original video sequence. (b) The same four frames with the subject's pulse signal amplified. (c) A vertical scan line from the input (top) and output (bottom) videos plotted over time shows how our method amplifies the periodic color variation. In the input sequence the signal is imperceptible, but in the magnified sequence the variation is clear.

A Research Organization has developed a new Camera technology which can diagnose a patient's heart beats and other remote medical diagnostics through a camera by using a new set of software algorithms that can amplify aspects of a video and reveal what is normally undetectable to human eyesight, making it possible to, for example, measure someone's pulse by shooting a video of him and capturing the way blood is flowing across his face.

The software process breaks apart the visual elements of every frame of a video and reconstructs them with the algorithm, which can amplify aspects of the video that are undetectable by the naked eye. These aspects could include the variations in redness in a man's face caused by his pulse. "Just like optics has enabled [someone] to see things normally too small, computation can enable people to see things not visible to the naked eye."

The researchers plan to make their software code available to others this summer. They predict the primary application will be for remote medical diagnostics.

They add that any video footage can be used, although depending on the quality of the camera that captured the footage, noise and artifacts such as graininess will also be amplified. So the higher the quality of the footage, the better the outcome using the program. "What's really nice about this technique is that it can just take standard video, from just about any device, and then process it in a way that finds this hidden information in the signal."

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