

Ray Kurzweil on the imaging industry of tomorrow

Kurzweil is a futurist and the opening keynote speaker for the 2005 PMA Imaging Conferences

Ray Kurzweil is an inventor, entrepreneur, author and futurist. He was the principal developer of the first omni-font optical character recognition (OCR), the first print-to-speech reading machine for the blind, the first CCD flatbed scanner, the first text-to-speech synthesizer, and the first music synthesizer capable of recreating the grand piano and other orchestral instruments, among other things. He is the author of several books, including "The Age of Intelligent Machines," "The Age of Spiritual Machines," and the forthcoming "The Singularity is Near: When Humans Transcend Biology."



Futurist Ray Kurzweil is a 2005 PMA Imaging Conferences keynote speaker.

Kurzweil is featured in an article in the December issue of *Photo Marketing* magazine, highlighting his overall vision of the future. Here, he provides his take on the imaging business in coming years and decades.

Digital Imaging Digest: The imaging industry, like many industries, is suffering through some major growing pains as the result of new technology. Where do you think digital imaging will lead?

Kurzweil: We're going to see a convergence of many different computer functions around the cell phone. Everybody has a cell phone, but not everybody has a music player and not everybody has a digital camera. So they're putting all these functions in cell phones already. Right now, they're not being used so much for high-quality personal photography, but more as a means of communication. But within 18 months, the quality of cameraphones is going to equal that of high-quality digital cameras, and the cameraphone will eclipse the separate digital camera.

Within two years or so, cameraphones will have high-speed Internet access. High-quality phones will play music and be your portable computers and game players. Everything is going to be in the cell phone.

There are a couple of difficulties in having a device that small; but we're going to move, by the end of the decade, to having the display be in your glasses or contact lenses. The image will be written directly to your retinas; so you will see a very high-quality image, or any other computer display, hovering in the air as a virtual display. These systems can also provide full emergent virtual reality. They will be able to detect the movement of your head and eyes, so the image will

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Reallusion launches FaceFilter Studio

New software allows users to create smiles, shave pounds from photo subjects

FaceFilter Studio (www.facefilter.com) is the newest release from animation and graphics software developer **Reallusion**, San Jose, Calif. (www.reallusion.com). The software allows users to change facial features in any digital photo and apply instant repair to common photo problems.

With the FaceFilter Studio facial improvement technology, you can enhance expressions, reduce oily gloss, neutralize heavy shadow, remove facial blemishes and red eye, enhance skin tone, and automatically correct color in digital photos. The application, which supports images up to 12 megapixels in resolution, also offers a digital brush to make photo subjects appear thinner.

Reallusion spokesperson **Mendy Werne** says there are two markets for the product: consumers and professional photographers.

“Anyone who takes digital photos can use it; it’s very quick and easy. Professional photographers will love it, because FaceFilter basically allows you to give someone a face lift. You can take away freckles or wrinkles, or enhance facial expressions, for example. If you take a group picture and one person isn’t smiling, you can change the expression and make them smile. So, while it’s easy enough for a consumer to use, it also has deeper features a professional photographer would need.”



FaceFilter Studio offers automatic sensing of a subject's facial features, removing the need of fitting the facial feature.



The software creates a mask over the subject's face, and corrections are made within that mask.

FaceFilter Studio offers automatic sensing of a subject’s facial features, removing the need to fit the facial feature. It can be used for individual images; but with group shots, the software allows you to apply similar corrections or enhancements to multiple subjects from a clipboard.

The process begins with a user importing any digital picture (JPEG, BMP, or GIF format) and selecting a face to enhance. The automatic fitting process allows you to refine the placement of the digital mask. You can make a number of corrections, and enhance facial expressions with one of 27 expression templates. Physical features can be manually adjusted with 16 muscle control “sliders” to achieve more subtle expression changes. FaceFilter offers preview and comparison modes to serve as references. Final results can be saved in JPEG, BMP, or GIF formats, or can be directly pasted back to third-party image editors.

FaceFilter Studio can work in conjunction with Photoshop, although Photoshop is not required for use. Werne says FaceFilter can make corrections and enhancement much faster than Photoshop. In addition, the product’s facial expression enhancements are keyed to a complete set of facial muscles, rather than just one feature.

Images from Photoshop can be copied and pasted into FaceFilter Studio, manipulated, and then pasted directly back into Photoshop.

Reallusion has studied all the facial muscles to create more natural expression enhancement than can be achieved with Photoshop alone, the company says.

“When you smile, the lips pucker a little, the corners of your mouth go up, your cheeks get fuller, your eyes squint a little — and all these elements are tied together,” Reallusion says. “In Photoshop, each facial element would have to be individually enhanced. FaceFilter ties all these together, and also allows the user to create a template if they have a particular enhancement effect that is used often or needs to be replicated in several photos, either of the same subject or different subjects.”



FaceFilter provides preview and comparison modes, so the user can see “before” and “after” images side by side.

“For example, if someone had a physical disfigurement, such as a drooping eye from a stroke, the user could make one adjustment, save the adjustment as a template, and apply it to all other photos with that individual in it. With Photoshop, the user would have to repeat the adjustments for each photo.”

FaceFilter Studio is priced at \$59.95 and is available for purchase via electronic download at <http://www.reallusion.com/facefilter/purchase.asp>.