



DarbeeVision Buzz

PRODUCT

DESIGN & DEVELOPMENT

Darbee Visual Presence: Technology For Life-Like Images

<http://www.pddnet.com/news-Darbee-Visual-Presence-Technology-For-Life-Like-Images-052110/>

Darbee Visual Presence: Technology

At the heart of Darbee Visual Presence there is a discovery. Paul Darbee found that you can actually embed stereo depth information into monoscopic images and achieve gratifying results.

A disciplined eight years of exploration into the neuro-biologic basis for human vision has yielded a patented and powerful human-vision-based model for digital image enhancement. It has also yielded a sublime solution for making 2D images look full of depth and realism.



DarbeeVision whitepaper

<http://www.techbites.com/201005082687/myblog/articles/z000a-darbeevision-whitepaper.html>

Introduction

Computational image enhancement solutions are revolutionizing the way we enjoy digital content. Today improvements in processors extend digital image quality far beyond the limitations of fidelity. Features like millions of pixels and billions of colors will no longer determine the ultimate quality and realism of the image. High performance computation is now being used with image processing in new and innovative ways to enhance the quality of our digital imaging and more importantly, the experience that we have. This is analogous to the advances made in audio processing, beginning with Dolby.



DarbeeVision Enhances Depth

<http://pmanewsline.com/2010/05/06/darbeevision-enhances-depth/>

A new imaging process adds depth cues to make any image “seem to pop off the screen with incredible depth and realism.”

Paul Darbee developed the first preprogrammed universal remote control in the 1980s. He founded [DarbeeVision](#) in 2002, and in 2006 was awarded a patent for the visual computing process known as Darbee Visual Presence.

“Fidelity is not the end point for image realism,” Darbee says. “High performance computation is now being used with image processing in new and innovative ways to enhance the quality of our visual experience.”



Is Darbee Visual Presence the real 3.5 D ?

<http://stereoscopenews.com/hotnews/3d-technology/software-a-hardware-tools/619-is-darbee-visual-presence-the-real-35-d-.html>

“Darbee Visual Presence” is an image processing algorithm dubbed as “3.5 D”. *Darbee Visual Presence* is a process improving depth cues in 2D images. Of course, applied to the two images of a 3D video stream, the result is even more impressive. The typical application segment is image processing inside display devices.

For the technically inclined, Darbee uses parallax disparity as the basis for local luminance modulation within an image, using a patented defocus-and-subtract method which is selectively applied based upon a fast and accurate saliency map.

Jon Peddie's TECH WATCH

Darbee brings you 2.5D

Paul Darbee is a persistent inventor and counts among his many successes the universal remote control that so many of us enjoy. He also developed a fiber-optic array that used fibers for pixels and that led him to analog synthesization of video, which led him to dual camera stereovision experiments, which led him to what he's now calling Darbee Visual presence—2.5D imagery on a flat non-auto-stereoscopic screen without the need for any glasses. This he found was due to cues the brain got from the image that makes one interpret depth through monocular elements which include size (distant objects subtend smaller visual angles than near objects), texture gradient, lighting and shading, and “distance fog” (the foreground has high contrast; the background has low contrast).

THE WALL STREET JOURNAL.

Seeing Is Believing With Breakthrough Digital Imaging Technology From DarbeeVision

<http://online.wsj.com/article/PR-CO-20100428-909245.html?mod=wsjcrmain>

The Darbee approach solves an extremely tough challenge for monoscopic digital images -- adding depth cues while avoiding artifacts. Darbee uses parallax disparity as the basis for local luminance modulation within an image, using a patented defocus-and-subtract method which is selectively applied based upon a fast and accurate saliency map called the Perceptor(TM).

With 3D television already in the stores, does Darbee add anything to stereoscopic 3D content? "Indeed it does," notes Darbee. "When you add Darbee Visual Presence(TM) to the left and right images of each stereo frame in a movie, the result is stunning to look at through the viewing glasses. It's super-realism. We call it 3.5D."



Seeing Is Believing with Breakthrough Digital Imaging Technology

We've all heard the phrase, "You know it when you see it." Seeing is believing, and your viewing experience is enhanced when your eye knows it 'looks good.' That's why high definition has become the standard by which all others are judged, and its proliferation has significantly enhanced the overall viewing experience. Is high definition as good as it gets? Can the best get better?

"Today, improvements in processors extend digital image quality far beyond the limitations of fidelity," noted Paul Darbee, DarbeeVision's founder and CEO. "We now know that fidelity is not the end point for image realism. High performance computation is now being used with image processing in new and innovative ways to enhance the quality of our visual experience. In many ways, what is happening in the world of digital image processing is analogous to the advances made in audio processing, beginning with Dolby's revolutionary approach to audio engineering."



Seeing Is Believing With Breakthrough Digital Imaging Technology From DarbeeVision

According to renowned innovator and entrepreneur Paul Darbee, the answer is "Yes." To get to this answer, Darbee found himself asking -- how does one insert depth cues to create images that seem to pop off the screen? Is it possible to make a visual experience where the viewer is immersed into a two-dimensional world with incredible depth and [lifelike images](#)?

Darbee employed his uncanny abilities to synthesize large complex blocks of mathematical formulas to develop what became the de facto standard in the television industry in the eighties: the universal remote control. And now, some 25 years after his success as one of the founders of Universal Electronics and with a number of patents under his belt, here he was tackling a new problem.

Bloomberg Businessweek

Seeing Is Believing With Breakthrough Digital Imaging Technology From DarbeeVision

The team at [DarbeeVision](#) has discovered that pictures can be made even better than what the most perfect camera and display systems can produce. Going beyond the limitations of optics and electronics and taking into account what the human visual system does when images are viewed is the key to achieving the best images possible. By using computers to process an image in the same way a human brain does and then adding these results back into the original image, pictures take on new properties that are both unexpected and visually gratifying.

Today, all digital media can be processed to improve contrast and color depth, add sharpening and filter noise. However, these solutions are limited by an inability to transcend fidelity constraints, and they often add unnatural artifacts, worsen noise or process parts of the image inappropriately.



Seeing Is Believing With Breakthrough Digital Imaging Technology From DarbeeVision

Darbee processing happens in real-time, with performance surpassing HD 1080p/60. The image processing is done intra-frame so no large buffer memory or time delays are required. Processing is resolution independent, scaling linearly with the number of pixels in a frame. The processing is local, modifying the image luminance on a per-pixel basis.

It has been said that Darbee does for images what Dolby does for sound. Darbee comments that, "We adapt images to people by adding depth cues. Simply said, we sweeten the image for your brain. If you can see it, you can believe it."