Hardware

See It Right
iZ3D says its new line of 3D visualization systems, which feature a 22-inch widescreen monitor, is designed for extreme game play.

Artists often have difficulty creating images in 3D while viewing the design in 2D. iZ3D developed an adjustable 3D display environment that they claim doesn’t cause eyestrain, spatial disorientation, or headaches. In 3D mode, viewers can see clear, bright, sharp images and videos by wearing any of a variety of iZ3D passive polarized glasses.

The drivers feature 64-bit compatibility, CrossFireX, and Open GL Quad Buffer support. The stereoscopic-3D drivers are compatible with popular dual-output cards and are optimized to take advantage of Intel’s Core 2 Duo and Intel Core 2 Quad processor technologies. Any PC equipped with a dual-output video card can power the unit.

Specifications include 1,680 × 1,059 resolution, a 3D viewing angle of up to 170 degrees, 5 millisecond response time, a 700:1 contrast ratio, and 16.7 million colors.

For more information, visit www.iz3d.com.

Virtual-Camera Tracking System
The IS-900 VCam virtual-camera tracking system from InterSense is an inertial-ultrasonic virtual-camera tracking system for previsualization of virtual content. According to the company, the system enables producers of animated and 3D feature films, games, and videos to increase productivity, streamline workflow, and lower production costs.

The system creates the realism of handheld and steady-cam operator moves from a virtual camera. Previsualization of virtual content occurs in real time, at previsualization resolution.

The IS-900 features InterSense MicroTrax 6-DOF motion-tracking sensors directly integrated into a production camera body with Autodesk MotionBuilder functions mapped to the camera’s interface controls. A three-axis analog joystick added to the VCam lets translation, rotation, and scaling of the virtual environment in MotionBuilder help set up or scout a virtual shot. In addition, buttons on the camera for zoom, play, record, and jog transfer production control to the camera operator. Remote video or wireless options are also available.

For more information, visit www.intersense.com.

Virtual Mirror
This augmented reality application from the Heinrich-Hertz Institute of Berlin enhances the visualization of customized consumer articles such as clothes, shoes, and jewelry. Instead of customers using a real mirror to see how clothes look on them, the Virtual Mirror uses 3D image-processing techniques to simulate how the clothes look on customers. A camera captures the real world and outputs the mirrored images onto a large display that replaces a real mirror.

For more information, visit www.hhi.fraunhofer.de/index.php?id=2047&L=1.

Interactive Ray Tracing
At Siggraph 2008, Nvidia demonstrated what it calls the first fully interactive GPU-based ray tracer.

According to the company, the demonstration showed linear-scaling rendering of two-million polygon, antialiased automotive styling. The company adds that the ray tracer performed at up to 30 frames per second at 1,920 × 1,080 resolution. This was for an image-based lighting paint shader, ray-traced shadows, and reflections and refractions running on four Quadro GPUs in an Nvidia Quadro Plex 2100 D4 Visual Computing System.

For more information, visit www.nvidia.com.

Everything Is within Reach
According to Contour Design, its RollerMouse PRO is designed to continue the enhanced health and safety features and increased productivity capabilities of its original RollerMouse. However, the PRO includes such improvements as a lengthened rollerbar, two new function buttons just below the left of the rollerbar, a repositioned scroll wheel, reshaped versions of the original three function buttons, and selectable, hard-coded function options.

Contour Design made the rollerbar 67 percent longer than the original RollerMouse version’s bar.
longer in response to feedback from larger-framed users who complained that they had to scrunch their hands together to manipulate the rollerbar. The company also extended the rollerbar to the right and away from the function buttons to give users with motor impairment freer access to the bar while minimizing the risk of accidentally hitting a button.

The RollerMousePRO costs $199.95. The company will continue to produce the original RollerMouse, and it offers a 30-day free trial for the PRO.

For more information, visit www.contourdesign.com.

**Software**

**Digital-Image Enhancing**

Akvis Software announced Akvis Enhancer v.9.5 for Windows and Macintosh. The company claims the program improves detail on an image, no matter what the fuzziness’s cause was—poor or excessive lighting, motion, or bad focusing. The standalone version supports HDRI (High Dynamic Range Imaging) technology. The new release supports Exif data (the data registered by the camera when shooting—the date, the settings, and so on). The new version ensures that these data won’t get lost after processing.

The software offers three modes. In the Enhancer mode, the program brings out details on a single shot by intensifying color transition. The tool is useful for when a photo has an uneven exposure. One example is when a picture has been taken against the light source and, consequently, the foreground objects are hardly discernible. This problem can be especially annoying when someone is taking a person’s picture.

The Focus mode improves blurred images by bringing into focus the whole image or only certain parts of it. This mode is for when the camera fails to focus on the object being shot and the photo comes out fuzzy. The mode offers several presets to help first-time users.

The HDR mode is available only with the standalone version of the application. The HDRI technology expands the dynamic range of an image and shows details in both shadows and highlights.

The program is available as a standalone application and as a plug-in to a photo editor. The plug-in version has only the Enhancer and Focus modes. It supports Photoshop batch processing, which allows applying the same settings to a series of images. The plug-in version is compatible with Adobe Photoshop, Photoshop Elements, Corel Paint Shop Pro Photo, Photo-Paint, and PhotoImpact, among other programs.

For more information, including a free 19-day trial, visit www.akvis.com.

**Visual Search Tool**

LeafThrough, by Screen Software, lets office users flip through the pages of multiple electronic documents on their computer monitor, just like turning a book’s pages, without having to launch application software to view the files.

Screen Software selected PDF technology from Global Graphics’ new eDocument Library because it can produce preview images quickly from PDF files and will let Screen add new features to the application in the future, including XPS (XML Paper Specification) viewing capability and advanced text search.

LeafThrough is licensed in standalone and server versions. It’s principally for office users who create and refer to many different files. With LeafThrough, users can have many electronic documents open on their monitor at any time and can search text strings from all the documents to find a target document file, with the visual motion of the pages turning over. The standalone version lets users find documents using a desktop search engine and flip through pages. The server version creates display data from the document on the server so that users can review pages. A LeafThrough Viewer is available to office users for viewing company internal documents by connecting client PCs to the company’s server.

Screen Software also plans to sell a LeafThrough contents viewer to providers of content on DVDs who need viewing technology and search capabilities as well as to software vendors who might want to integrate the product as a viewing feature in their
own systems. The company also plans to expand LeafThrough into Web-based applications.

According to the company, within one architecture, the eDocument Library meets market demands for smarter applications that not only can smoothly convert one document format to another but also let users access or modify every aspect of document content. eDocument Library provides file format conversion, manipulation, and analysis and optimization capabilities with support for page description languages such as PostScript, PDF, PCL (Printer Command Language), and XPS, as well as proprietary formats.

For more information, visit www.glographics.com.

**Advanced Machine Learning**

Edge 3 Technologies’ line of GPU middleware incorporates machine learning for machine-vision applications. Edge 3 claims its technology is 1,000 times faster and more accurate than conventional CPU-based technology. The company’s methodology involves

- exploiting the Compute Unified Device Architecture (CUDA) to improve real-time object segmentation and tracking performance and to reduce error rates,
- using CUDA for machine learning and training on massive amounts of data to improve classification and identification of user gestures and postures,
- identifying and segmenting various users in the field of view,
- learning users’ behavior and habits,
- differentiating users through various biometrics, and
- performing usability testing on thousands of subjects.

Consumer market applications of the middleware include aerobic computer games such as martial-arts games, gesture-based vehicle interfaces, augmentative interfaces to help people with severe motor impairments, and smart homes.

For more information, visit www.edge3technologies.com.

**Tracking Faces**

Seeing Machines’ faceAPI provides a suite of image-processing modules for tracking and understanding faces and facial features. These modules are combined into an API toolkit that delivers information that users can incorporate into their products or services. According to Seeing Machines, faceAPI is the only comprehensive, integrated solution for developing products that leverage real-time face tracking. Because all image processing for face tracking is handled internally, users don’t need computer vision experience.

The current release (v3) provides two optimized head-tracking engines, each with different performance and load characteristics. The product tracks 3D head position and orientation, along with lip and eyebrow shape and position (facial expression). Face texture information is provided, along with supporting features for integration into the user’s software development, including documentation.

faceAPI is available for noncommercial licensed use. The license agreement is subject to restrictions and must be accepted by the user before downloading the product.

For more information, visit www.faceAPI.com.

**Gesture Recognition**

SoftKinetic’s iisu is a gesture recognition platform for creating interactive digital entertainment, gaming, and consumer electronics applications. SoftKinetic iisu is compatible with 3D depth-sensing cameras and, according to the company, lets application developers build natural, immer-
Softkinetic says that with iisu and a 3D depth-sensing camera, you can capture a person’s movements in real time, with high accuracy and high resolution. Each pixel produced by the camera is characterized by its depth—the distance between the camera and the point of the object corresponding to that pixel. Users can leverage that depth information to develop interactive applications involving immersive, transparent, and intuitive user experiences.

Softkinetic iisu insulates application developers from the low-level technicalities of 3D depth-sensing cameras and reduces development cycles by offering a complete set of tools and APIs, says the company. iisu libraries are written in standard C and C++ and have been optimized for performance and memory use. The product can be adapted for different hardware platforms.

For more information, visit www.softkinetic.net.