Spherical Imaging for Faces

The Aguru Dome is a spherical imaging device from Aguru Images that’s used primarily for capturing the shape and reflectance properties of the human face. The device uses a combination of mirrors, varying light intensities, and cameras to rapidly and accurately capture the object from many angles in many lighting conditions.

Because face capture requires accuracy beyond traditional applications, the dome models faces with millions of polygons and captures reflectance data on the skin’s translucence for each polygon. The dome can be operated at a fixed location or transported for use in the field.

Visit http://www.aguruimages.com for more information.

Example of Organic Motion’s Stage system capturing an actor’s motion (without a special suit or markers) and outputting a variety of angles on-screen

Motion Tracking Minus the Markers

Stage is Organic Motions’ human motion-capture system that works through optical tracking. The system uses artificial intelligence and can reportedly track highly accurate, full-body motion in real time with no markers, body suits, or marker occlusion.

The product offers data that’s available for immediate review and analysis, flowing in real time into Autodesk’s MotionBuilder or other animation software, reportedly clean and production-ready. It outputs all major bone segments, 3D mesh data, and full surface textures.

The system is supposed to be easy to use, taking 3 minutes to calibrate the system and less than 1 minute to calibrate the actor. According to the manufacturer, everything should be set up and running in less than 3 hours. The artist or animator should be able to use the system directly, with no technician needed.

Visit http://www.organicmotion.com for more information.

Capture 3D Scenes in Real Time

Mesa Imaging announced a miniature range and monitoring camera called SwissRanger SR-3000. This camera acts as an optical imaging system, offering high-resolution 3D image data in real time.

The product is compact and reportedly easy to use in a variety of conditions, such as monitoring hazardous areas in buildings, vehicles, or on machines. The SR-3000 is based on the time-of-light principle and works with a modulated infrared light source. The emitted light pulses are reflected by the objects in the scene and travel back to the camera, where their precise time of arrival is measured locally in each smart pixel of a custom image sensor.

In contrast to conventional cameras, the SR-3000 range camera not only determines the local brightness in the scene, but also the complete distance map—that is, the 3D model of its environment.

Visit http://www.mesa-imaging.ch for more information.

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Seamless Eye Tracking

EyeTech’s ET3 system uses dark pupil tracking and robust algorithms to provide accurate and seamless eye tracking. ET3 consists of a high-definition camera with strobed infrared lights embedded into one compact module. The included software integrates into other applications such as games, kiosks, research, and custom-embedded solutions.

ET3’s advantages include monocular or binocular tracking, accuracy, and a wide range of head motion. The calibration process is simple and features auto-pilot, one-point calibration for quick automated eye tracking.

For more information visit http://www.eyetechds.com.

3D Spherical Display

The OmniGlobe from ARC Science is reportedly the first true 360-degree spherical screen display. Combining high-performance digital projectors with ARC’s proprietary optics, the system is simple and the contrast screen treatment shows well under brighter ambient light conditions.

The system also works well under typical museum lighting conditions. It’s available with 32-inch (80-cm) and 60-inch (1.5-m) screens.

In addition to the natural earth, solar system bodies, and space, subject matter for the spherical display can include geophysical and meteorological data, global graphics regarding the environment, ecology, demographics, geopolitics, or historical subject matter.

For installations with limited space, ARC offers the DayGlobe, a half-sphere system with HD detail for wall mounting.

For more information visit http://www.arcscience.com.

Holographic 3D Display

Holografika announced HoloVizio, a glassless, holographic 3D display system that enables the user to watch an image in a wide field of view with continuous motion parallax. Overcoming the limitations of stereoscopic or multiview systems, it gives the user a natural view from any direction.

Each image visualized by HoloVizio contains information that’s equivalent to almost 100 conventional 2D images. Every single voxel of HoloVizio emits light beams at a different color and intensity to various directions. If these lights are controlled appropriately, it appears as if they were emitted from behind or in front of the screen. In such a case, viewers perceive the points of an image behind or in front of the screen floating in the space.

Tools

The following is a tool that might be of interest to the computer graphics community.

Automated Fault-Finding Tester

Moravia Worldwide announced the release of its business unit’s (QASight’s) FaulFinder testing tool. Designed by QASight’s testing and engineering teams, this tool helps increase the quality of testing and accelerates the testing process by automating the recognition of GUI defects and providing this information in customizable reports.

The tool runs automatically in the background during manual testing, finding GUI defects and reporting them in a predefined format. This way engineers can combine specific manual test runs—either during localization or functional testing—along with continuous GUI testing, without needing to deploy large-scale commercial automation tools.

For more information visit http://www.moraviaworldwide.com.

Email Us!

Email your “Tools and Products” recommendations to us at cga@computer.org.
**Software**

**Advanced DLP Stereoscopic Imaging**

Texas Instruments released technology for the first DLP 3D high-definition television. The technology uses digital-light-processing chips that contain a rectangular array of up to two million hinge-mounted microscopic mirrors. Each of these micromirrors measures less than one-fifth the width of a human hair and retains more accurate resolution than competing technologies, such as liquid crystal displays.

The product’s drive has a frame rate of 240 Hz—four times higher than the standard video frame rate—providing smooth, flowing video. The nano-Spindt FED adopts a newly developed short decay-time phosphor and low latency (low resistance and capacitance) cathode ray structure, which has superior motion traceability.

For more information visit http://www.dlp.com.

**Displays High-Speed Motion**

Field Emission Technologies announced its 240-Hz drive nano-Spindt field emission display (FED). The drive’s high-emission efficiency aids the display in capturing and showing high-speed motion images.

The product’s drive has a frame rate of 240 Hz—four times higher than the standard video frame rate—providing smooth, flowing video. The nano-Spindt FED adopts a newly developed short decay-time phosphor and low latency (low resistance and capacitance) cathode ray structure, which has superior motion traceability.

For more information visit http://www.fe-tech.co.jp/.

**Corrects Color for Large Volumes**

PictoColor announced the release of iCorrect EditLab ProApp 6.0, a color-correction software for large-volume digital image workflows. The new application features fast batch-processing color correction.

With its technology, tools, and workflow enhancing features, iCorrect EditLab ProApp saves time and minimizes the frustration of making color adjustments. The goal of the product is to help photographers spend less time in front of the computer and more time behind the camera.

Visit http://www.pictocolor.com for more information.

**Customizable Eye Tracking**

Tobii offers off-the-shelf or customized eye tracking components for seamless integration into various devices. The Tobii eye-tracking components provide eye gaze point, eye/head position, and pupil size data.

The hardware comes with an interface and software libraries for eye control and eye gaze analysis, along with a complete toolbox for eye tracking. The product is packaged as a single, compact design with no external cameras or lightning units. Integration is reportedly easy, requiring no large modifications to your system.

The components allow the user to move freely and do not require that the user has to wear anything. According to the manufacturer, tracking is fully automatic with high accuracy, regardless of glasses, contacts, eye color, age, ethnic background, or lighting conditions.

For more information visit http://www.tobii.com.
Automates Creating Surface Designs

Artlandia updated its pattern design plug-ins to be compatible with the Creative Suite 3 versions of Adobe Illustrator and Adobe Photoshop. Artlandia’s SymmetryWorks 4 and Artlandia SymmetryShop are used by designers in the textile, print, Web, and illustration markets. The update ensures a smooth transition for designers wanting to take advantage of the features in Creative Suite.

Artlandia’s SymmetryWorks and SymmetryShop automate the process of creating surface designs in Illustrator and Photoshop. SymmetryWorks lets the user create and interactively edit patterns with both vector and raster elements, while SymmetryShop specializes in creating patterns from large scanned images and high-resolution photographs.

The update is available for both Windows and Mac operating systems. For more information visit http://www.artlandia.com.

Customizable Image Publishing

Cerebrosoft released B*Gallery version 3.0, a Windows, Macintosh OS X, and Linux application for creating HTML image galleries. With the latest version, users can update, extend, and share the Web galleries, connecting the images into photo albums.

Users can also incorporate sound and video clips into the galleries, which come with preconfigured and customizable themes. Each theme offers a feature set, including a gallery index page, album slideshow, and photo details page. Advanced users have full access to the template files that make up a theme, and can fully integrate galleries into their Web sites, matching their look and feel.

B*Gallery lets users regenerate their Web pages if they want to update their gallery. Users can also resize every image in their gallery with a few clicks.

Users can try B*Gallery for free, with the limitation that albums only contain a maximum of eight photos. Registering B*Gallery for $24.95 removes this limitation and entitles you to technical support. For more information visit http://www.b-gallery.biz/.

Multiple-Point 3D Visualizations

CEI announced that its latest release of EnSight includes a sophisticated camera feature, which lets users create 3D visualizations with multiple vantage points. The new feature provides users with nearly limitless viewing options and makes it possible to create walkthroughs and walkarounds, following trace particles through flows and simulating real-world test cameras, such as those used in automotive crash tests.

The feature eliminates the need to move a virtual object simply to view it from a different perspective. Users can now view objects from any angle by moving virtual cameras around the object on user-defined pathways or by positioning static cameras at any defined point.

The new feature provides several ways to define a moving camera’s path. Users can create splines by using the cursor tool, inputting control points or X, Y, and Z coordinates, or positioning a camera on any moving object. The moving object can even be a trace particle, making it possible for a camera to essentially ride a trace particle through a flow path.

The camera feature is now available to all licensed EnSight users in version 8.2.4b, which can be downloaded at http://www.ensight.com/downloads/index.php.