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graphics cards

products

ATI Introduces Fire GL X1

The latest heavy hitter in the 3D graphics accelerator wars is the Fire GL X1 from ATI Technologies. The new card is based on ATI's Radeon 9700 Visual Processing Unit (VPU) and delivers fully programmable floating-point architecture in both OpenGL 2.0 and DirectX 9—the first such card, according to ATI, to do so.

The card is also the first in the industry to offer eight parallel rendering pipelines, which are designed to provide digital content creators with the ability to preview finished scenes in real time. The Fire GL X1 is also engineered to offload complex data calculations from the CPU, therefore freeing the workstation to perform other production tasks.

Besides the ability to generate real-time photorealistic renderings, the new card offers unlimited color range beyond 16.7 million colors, error-free and lossless multipassing, and fully programmable architecture. The Fire GL also features dual integrated display controllers with dual monitor support, and quad-buffered stereo graphics support that enables stereographic display. The price of the card is $995. —*Jenny Donelan*

■ **ATI Technologies;** www.ati.com
infoNOW 61

image editing

products

Adobe Ships Photoshop 7.0

Adobe Systems' Photoshop is an industry-standard image-editing tool with a user base that the company estimates to be "in the millions." Version 7.0 of Photoshop includes a major upgrade to the File Browser, an image organization tool that now lets users browse image thumbnails, as well as quickly rotate, sort, rank, and batch images, and view EXIF (Exchangeable Image File) information from digital cameras.

Additional new features include a healing brush that lets users easily remove dust, scratches, blemishes, wrinkles, and other flaws from images while preserving the images' original shading, lighting, and textures. Version 7.0 also has a Painting Engine, which lets users simulate traditional painting techniques.

A Scripting Support plug-in, available for downloading from Adobe's Web site, now lets users automate repetitive tasks such as controlling multiple documents. Photoshop 7.0 costs $609 and runs on Windows and Macintosh platforms. —*JD*

■ **Adobe Systems;** www.adobe.com
infoNOW 60

effects

products

Martian Hydrous Tools for Water Simulation

Martian Labs, a two-year-old company that develops software for the 3D animation industry, has introduced Martian Hydrous Tools, a suite of ocean surface simulation programs for film and television production environments. Martian Hydrous Tools integrates with Side Effects Software's procedural animation package Houdini to enable artists to create photorealistic ocean surfaces and object/fluid interactions from within Houdini.

Special features of Martian Hydrous Tools include an open architecture, so that users can customize the software according to their needs, automatic creation of whitecaps, and methods for creating wakes and splashes caused by objects (such as boats) in the water.

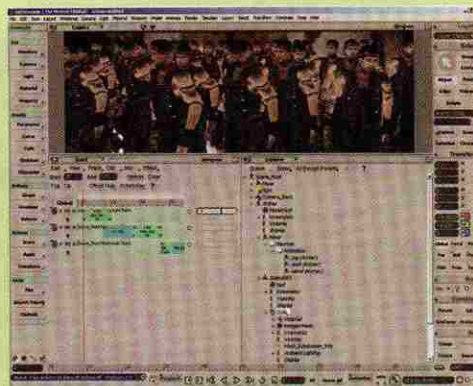Martian Hydrous Tools runs on Linux, Windows NT, 2K, and Irix platforms. The price is $2000.

Martian Labs also makes Martian Glue, a conversion plug-in that allows Houdini users to quickly import scene

Softimage|XSI 3.0 Adds Crowd Simulation

Version 3.0 of Softimage|XSI adds performance and productivity enhancements for modeling, animation, simulation, rendering, and compositing to Softimage's flagship product, which it calls a "nonlinear production environment." The latest version will enable content creators to work more interactively with larger and more complex characters, as well as with more objects in a scene. The new XSI crowd-simulation toolkit features a sophisticated behavioral animation and crowd simulation system, which incorporates full-featured behavioral scripting, visual state-graph editing, and dynamic motion synthesis for automating interactive object behavior.

Version 3.0 also includes additions to character construction and setup tools, including options for quickly generating fully customizable, film-quality biped and quadruped setups and rigs. Other software highlights include interactive rendering for working with High Dynamic Range images, an integrated dynamics simulation environment with hair/fur and particle enhancements, integrated compositing, and new tools for game designers, including real-time shader tools and Platform Development Kits for the Xbox and PlayStation 2 platforms.

Softimage|XSI 3.0 is scheduled for release this fall. Prices vary according to configuration. —*Karen Moltenbrey*

■ **Softimage;** www.softimage.com
InfoNOW 63

description data from other software packages into Houdini. —*JD*

■ **Martian Labs;** www.martian-labs.com
InfoNOW 62

Parhelia Offers Triple-Screen Viewing

Matrox's new Parhelia line of graphics accelerators is based on the company's 512-bit Parhelia-512 graphics processing unit (GPU), which includes 80 million transistors and 256-bit DDR memory that provides more than 20GB/s of memory bandwidth.

Although Matrox is known for making 2D graphics cards, and the new line is designed to provide high-end 2D performance, Parhelia also offers some novel 3D capabilities. A notable feature is Surround Gaming, which is designed to provide a three-display immersive game environment supported by titles such as Microsoft's *Flight Simulator 2002* and ID Software's *Quake III Arena*. Parhelia's TripleHead Desktop environment and Surround Design feature also provide three-display viewing for a variety of applications running under Windows 2000/XP, including AutoCAD, SolidWorks 2001, and 3ds max. Drivers for additional applications are planned. A board with 128MB of DDR memory will cost $399. Matrox also plans to ship a 256MB version. —*JD*

■ **Matrox Graphics;**
www.matrox.com/mga
infoNOW 64

broadcast
user focus

Devastating Effects

Powerful results can materialize by blending computer animation, visual effects, miniatures, matte paintings, and live action. Using this formula, digital artists at Riot (Los Angeles) conjured up a trio of tornadoes that devastates a stretch of farmland in the season-ending episode of *Smallville*, which re-aired in September.

The tornado sequence occurs after Lana Lang, a friend of the Kansas teenager who would one day become Superman, drives her pickup truck off the road. At first she is awestruck to see three thin tornadoes twisting across nearby farmland. But awe quickly turns to fear as the clouds converge and become one single, mammoth mass of wind and debris. Lang retreats to her vehicle just as young Clark Kent appears. As the storm lifts the truck into the air, Kent rescues her.

Ironically, rain dampened most of the season's shooting schedule, but on the day of the tornado shoot, it was warm and sunny. To create the illusion of dark, stormy skies, the digital artists used Discreet's inferno to replace the blue skies and soft cumulus clouds that appear in the raw production footage with menacing thunder clouds. "We also darkened the rest of the footage,

replaced shadows, and adjusted the lighting to make it consistent with the violence suggested by the wind machines used on location," says Don Greenberg, Riot's supervising visual effects compositor.

Greenberg then provided keyframes of the sky-altered background plates to the animators, who generated the 3D tornadoes. "The combined storm had to feel enormous," says John Decker, lead animator. "It had to be a slow-moving, heavy mass." The team gathered images of tornadoes from feature films and documentaries to use for reference but found that the twisters vary in their character. "No two look the same," he points out.

Using Alias|Wavefront's Maya and Pixar Animation Studios' RenderMan, the team at Riot generated all the twisters, then composited them into the live action using inferno. At first, particles were used to make digital dust and debris, then texture maps were added to provide the dense core.

Creating the massive single tornado presented the biggest challenge because

Riot artists created a trio of tornadoes that converge into a super-size twister in the TV series *Smallville*.

it needed to appear both larger and more powerful than the others, and it would be shown in close-up shots. This was done by generating more than 20 layers of particles to create the funnel cloud, then adding numerous 2D and 3D elements to the scene, such as leaves being whipped along the road, swirling dust clouds, and damaged road signs.

To integrate the tornadoes into the background, the team blended the tops of the funnel clouds into the sky and created mattes of foreground elements using inferno. —*Karen Moltenbrey*

□ **KEYTOOL: inferno, Discreet;**
www.discreet.com
infoNOW 65

games
user focus

The Right Moves

House of Moves Motion Capture Studios (HOM; Los Angeles) has provided more than 1000 digital motion files for Microsoft Game Studio's new fighting game *Tao Feng: Fist of the Lotus,* created by John Tobias (*Mortal Combat*) and a team at Studio Gigante. The game is scheduled for release in early 2003 for the Xbox platform.

To obtain the fighting realism featured in the game, HOM captured 1100 motions from 16 performers, and married the movements to multiple, disproportionate CG characters. The movements were obtained with Vicon's 24-

The game *Tao Feng* uses thousands of motion-captured moves.

camera 8i system, and then edited, or cleaned, with HOM's Diva software. Through HOM's Dominatrix technology, the motions were directly attached to the Maya (Alias|Wavefront) characters, which were provided by the game developer. —*KM*

□ **KEYTOOLS: Diva and Dominatrix, House of Moves;**
www.moves.com
infoNOW 66

A Cat Tale

A team of digital artists from Glassworks, a London animation and effects house, was extremely finicky about creating the first in a series of 3D television commercials for Kitekat cat food, which is airing now in the UK.

The 30-second spot, created by Glassworks with London-based Passion Pictures, features Cattus Kitekattus, a computer-generated cat who plays cat's cradle on a garden wall as a man walks by with a fish, followed by a butcher carrying meat. Surprisingly, the cat turns its nose up at the tasty morsels. But when its owner arrives with Kitekat, the cat lassoes a package of the food with the string, and begins to chow down.

Glassworks artists created the cat model in Alias|Wavefront's Maya, using a clay model produced by Passion Pictures as a guideline. "We followed the design but also had to take into account how we were going to animate it," says artist Sean Elliott. "I used a polygonal model, rather than a NURBS model, so we wouldn't have joins and seams. This helped when it came time to apply the fur and textures."

This stylized 3D cat steals the scene, and the food, in a TV commercial airing in the UK.
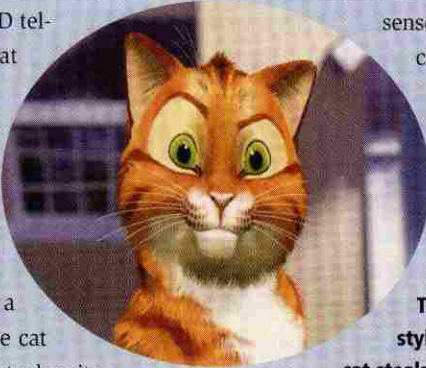
Elliott notes that the artists visited a veterinary college for a lesson on cat skeletons, so they would have a better sense of how to animate the model in particularly complex areas such as the shoulders. "Passion also provided us with 2D line drawings as a guideline for the animation," he says, "but it's so much easier to draw in depth and distortion with 2D animation than it is to achieve in 3D, especially when it comes to getting the desired softness and fluidity into the animation."

To texture the model, the team used Maya's built-in Fur tool. "Yet, we wanted to control the direction of the fur along the length of the cat's body," says 3D artist Rory Mark. "So we wrote a plug-in that allowed us to draw curves in the direction we needed the fur to lie. That created a map for controlling the polarization of the fur, thereby laying it in the correct direction." The completed model was then composited into the CG background using Apple Computer/Nothing Real's Shake and Discreet's flame. —*KM*

🖸 **KEYTOOL: Maya, Alias|Wavefront;** www.aliaswavefront.com
infoNOW 67

A Sharper Catalog

Customers at Spiegel.com, the online channel of Spiegel Catalog, can now view key product attributes in fine detail, regardless of their Internet connection speed, thanks to RichFX's Examine Solutions technology. Through the Zoom feature, cyber shoppers can get a closer look at product details such as embroidery or patterns, and with Color Swatch, they can preview the product in alternate hues.

"This technology shows some of the product details that a shopper would look for in a brick-and-mortar store. Often, these features are what make it a 'must have,' item," says Richard Burke, divisional vice president of e-commerce at Spiegel. "We are providing a more lifelike shopping experience, resulting in a comfort level in the buying decision." And, the results speak volumes. "Our studies show that a customer's use of Zoom or Color Swatching increases the

conversion to buying behavior. Also, the technology decreases merchandise returns, since there is less guesswork in the buying decision."

For the technology to work, Spiegel provided RichFX with a high-resolution image and the color choices for each item. Then, RichFX digitally mastered hotspots for the Zoom feature or integrated swappable colors for Color Swatch using its own tool set. Although seamless to the customer, html tags in the product page template invoke the features. To represent the appropriate option, Spiegel.com created simple on/off flags in its database, so the features appear as a product attribute on the page template.

Given the success of the technology on its site, Spiegel has expanded its use
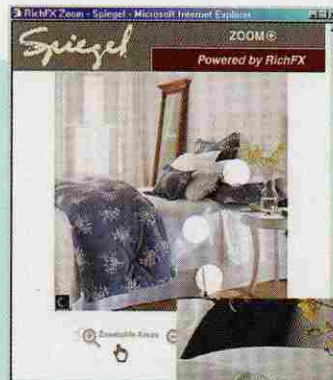
Spiegel's online shoppers can get a good look at merchandise before placing an order.

of Examine Solutions beyond the initial 200 items to include more fashion and home furnishings products, and will continue to add the features to other products and product categories such as electronics. —*KM*

🖸 **KEYTOOL: Examine Solutions, RichFX;**
www.richfx.com
infoNOW 68

technology | video

Seeing Isn't Believing

One of the highlights of the recent Siggraph conference was a demonstration of a provocative new technique for facial animation called Trainable Videorealistic Speech Animation. Developed by Tony Ezzat and a team at MIT's Center for Biological and Computational Learning, the technology allows the user to alter a simple video camera recording of a person saying something to make it appear that he or she is saying something completely different. With the new method, a synthesized speech sequence generated on a computer can be composited with a video sequence so that it is virtually impossible to detect the alteration. In the images below, the top row shows stills from a sequence of unaltered video images of a person speaking. The middle row is an animation of a synthetic mouth generated in the lab. The bottom row shows the synthetic mouth animation superimposed on the original sequence. —*Phil LoPiccolo*

Images courtesy Tony F. Ezzat, MIT.

technology | displays

Focus with Perspective

Xerox Parc researchers Patrick Baudisch and Nathan Good have designed a novel Focus Plus Context Screen, a large, low-res display with a high-res display embedded within. The hybrid projection technology allows the user to view details of images up close, while seeing the periphery in lower resolution. Customized software preserves the proper scaling of an image across both regions. The technology is aimed at users who work with visualizations that are too large and detailed to fit on conventional displays and who must continuously pan and zoom to examine specific areas. According to the developers, the technique enables users to work faster with fewer errors, and because only a portion of the screen is in high resolution, the technology is less expensive than array-based projection systems that provide sharp images over the entire screen. In the photo above, the inset area allows users to see individual cars on a satellite photo of San Francisco, while the surrounding region provides context by showing important landmarks of the city. —*PL*
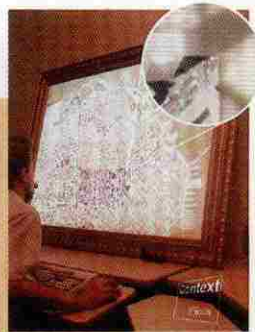
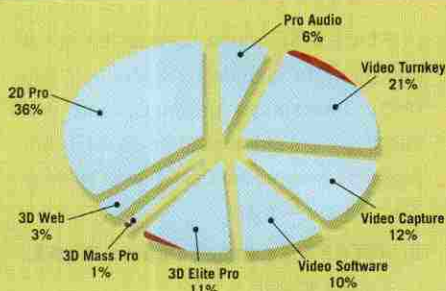Image courtesy P. Baudisch, N. Good, Xerox PARC, Siggraph 2002 Emerging Technologies.

market outlook

Graphics and Video Markets Merge

The lines between graphics and video continue to blur as technology such as real-time compositing and motion tracking become more widely available. The market for professional media creation products includes 3D professional tools as well as 2D, audio, and video tools—all used for creating digital content.

In a bird's eye view of the entire market, 3D tools represent 15 percent of the overall revenue derived from the entire professional content creation market. Video tools, which include software, hardware, and turnkey systems, make up the largest portion of the market, representing 43 percent of annual revenues.

Market Outlook data provided by M2 Research of San Diego, California, at info@m2research.com.

TOOL SEGMENTATION IN THE PROFESSIONAL DIGITAL MEDIA MARKETPLACE (IN REVENUES)

- Pro Audio 6%
- Video Turnkey 21%
- 2D Pro 36%
- 3D Web 3%
- 3D Mass Pro 1%
- 3D Elite Pro 11%
- Video Software 10%
- Video Capture 12%

Source: M2 Research Copyright 2002

news

In Brief

NaturalMotion (Oxford, UK) has announced VMC Action, the first product based on the company's Active Character Technology, which creates character movements based on artificial intelligence. VMC Action software is designed to enable 3D character animators to create action scenes without using a motion-capture facility....**Softimage** (Montreal, Quebec), a subsidiary of Avid Technology, has announced new tools for transporting data between Softimage and 3D applications including Alias|Wavefront's Maya, 2d3's boujou, Kaydara's FilmBox and MotionBuilder, and various gaming platform tools. Several of the new dotXSI 'Connect' strategy components are now available for download at no charge from SourceForge.net....**Cycore** (Uppsala, Sweden) has announced Version 5.3 of its Cult3D product visualization engine, which now comes with automated stereoscopy capability....**DAZ Productions** (Draper, UT), a developer of characters for the Poser 3D modeling package, has announced that it will acquire the facial animation product Mimic from **LipSinc** (Morrisville, NC), which has ceased developing software. —*JD*