Transformations

A quarterly publication from NVIDIA

FEATURES

2007 will be an exciting year for NVIDIA as we continue to focus on extending and expanding the reach of the GPU

A WORD FROM MIKE

We are entering the era of the GPU. As digital displays proliferate in everything from phones to automobiles, the GPU now plays a central role in the technology ecosystem. And, as we design the GPU to be more programmable, it is becoming an enabling technology with the potential to transform compute-intensive industries, such as finance, genomics, and oil & gas exploration. We hope you enjoy the inaugural issue of "Transformations," a quarterly newsletter designed to give you insight into the new and creative ways people are using NVIDIA technology.

Michael W. Hara
VICE PRESIDENT
INVESTOR RELATIONS AND COMMUNICATIONS

PROFESSIONAL SOLUTIONS

"NVIDIA graphics allow us, as CG pros, the confidence to tackle any project that comes our way, especially those as highly involved and detailed as the General Mills CTC commercial."

SWAY STUDIO, one of the top visual effects shops in north america, utilized NVIDIA QUADRO® technology in a TV commercial for GENERAL MILLS CINNAMON TOAST CRUNCH cereal.

For the commercial, SWAY suggested to General Mills that photo-realism should be used to recreate a piece of cereal as it tumbles from the cereal box, lands in a bowl, is doused with milk, swirls around in the bowl, and is scooped up by a spoon. The computer-generated imagery transitions into a live action shot as the spoon and cereal enter the young girl's mouth. Due to the viewer's close proximity to the cereal bowl, it was necessary for SWAY to recreate each cereal piece in detail. From the individual cinnamon and sugar crystals covering each piece, to the CG milk, the sequence demanded that huge amounts of geometric data (several million polygons) be displayed.

SWAY utilized NVIDIA Quadro graphics coupled with the following software solutions: Autodesk 3ds Max, The Chaos Group's V-Ray, and modo from Luxology. Real Flow 4, a fluids and dynamics simulation tool, also played a major role in simulating the dynamics for the tumbling cereal and the fluid dynamics used to create the milk. Without NVIDIA technology, scenes involving heavy geometric data would have been logistically impractical. NVIDIA's graphics technology allowed SWAY to work with large amounts of data with relative ease.

MARK GLASER, OWNER AND CREATIVE DIRECTOR OF SWAY STUDIO

"NVIDIA graphics allow us, as CG pros, the confidence to tackle any project that comes our way, especially those as highly involved and detailed as the General Mills CTC commercial."

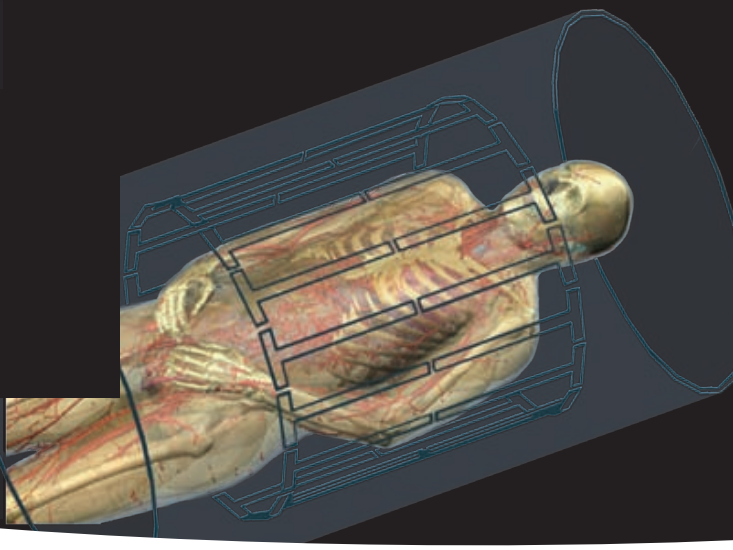
With NVIDIA technology, SWAY Studio was able to re-create over 100 pieces of cereal in extreme detail.

For more information, visit www.swaystudio.com

IMAGES COURTESY SWAY STUDIO

HIGH PERFORMANCE COMPUTING

"Running electromagnetic simulations using NVIDIA hardware empowers faster processing times by factors of 25 or more...allowing a level of complexity which nobody dreamed of, even two years ago."



BOSTON SCIENTIFIC designs and manufactures pacemakers and other biomedical implants that are safe for use with MRIs and other diagnostic imaging tools.

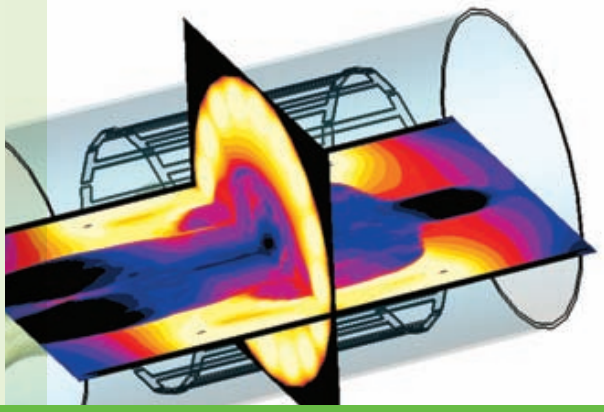
The design simulations required for this are compute-intensive and take considerable time to run on standard computer clusters.

Boston Scientific turned to Acceleware, who provides a proprietary simulation solution combining Schmid & Partner Engineering AG's SEMCAD X simulation software and NVIDIA GPU computing technology. As a result, engineers at Boston Scientific were able to speed up their simulations by factors up to 25x. Acceleware's solution allowed Boston Scientific to tap into the high-performance computing power of NVIDIA's parallel GPU architecture, dramatically reducing the time required to test various designs as each engineer's workstation now has the compute power of a cluster of CPUs.

Using Acceleware's solution, engineers at Boston Scientific are better able to investigate the influence and mutual dependency of multiple design variables. Not only can the simulations be conducted faster, resulting in lower-cost devices, but these advances also foster the development of new algorithms for simulating biomedical processes inside the body.

NIK CHAVANNES,
DIRECTOR OF SOFTWARE
SCHMID & PARTNER

"Running electromagnetic simulations using NVIDIA hardware accelerates processing times by factors of 25 or more—allowing a level of complexity to the analysis and optimization of medical products which nobody dreamed of, even two years ago. NVIDIA's and Acceleware's solutions have opened completely new worlds for Computational Electromagnetics."



High-resolution, CAD-based body image produced by SEMCAD X simulation software and NVIDIA GPUs.

For more information, visit www.acceleware.com www.bostonscientific.com www.semcad.com

IMAGES COURTESY ACCELEWARE

On the Go
With NVIDIA

Today's mobile device consumer is placing more and more value on multimedia features, whether it be music, photography, or video capture and playback.

With the industry moving towards a "slim modem" architecture, the applications processor has gained strength and needs to be fundamentally redefined in order to truly meet the growing multimedia demands placed on handsets today.

In January 2007, NVIDIA completed its acquisition of PortalPlayer, the company that provided the applications processor for the first five generations of the Apple iPod. The acquisition created a unique combination—NVIDIA's track record of innovation in graphics and multimedia coupled with PortalPlayer's proven low-power, high-performance solutions for handheld devices.

At 3GSM 2007 in February, NVIDIA launched the NVIDIA GoForce® 6100, the company's first applications processor. As well as delivering impressive audio and video features at unmatched, ultra low-power levels, the launch of the GoForce 6100 represented a fundamental change in the rhythm of the mobile phone industry.

Instead of the traditional three-year interval between new applications processor architectures, a symptom of being tied to a baseband roadmap, NVIDIA plans to introduce a new platform every year, with refreshes to that platform every nine months. This is a game changer, providing OEMs with much-needed relief from having to plan designs two years out, eliminating guesswork and allowing them to be more responsive to the market and to design better products that are more targeted to the evolving demands of the consumer.

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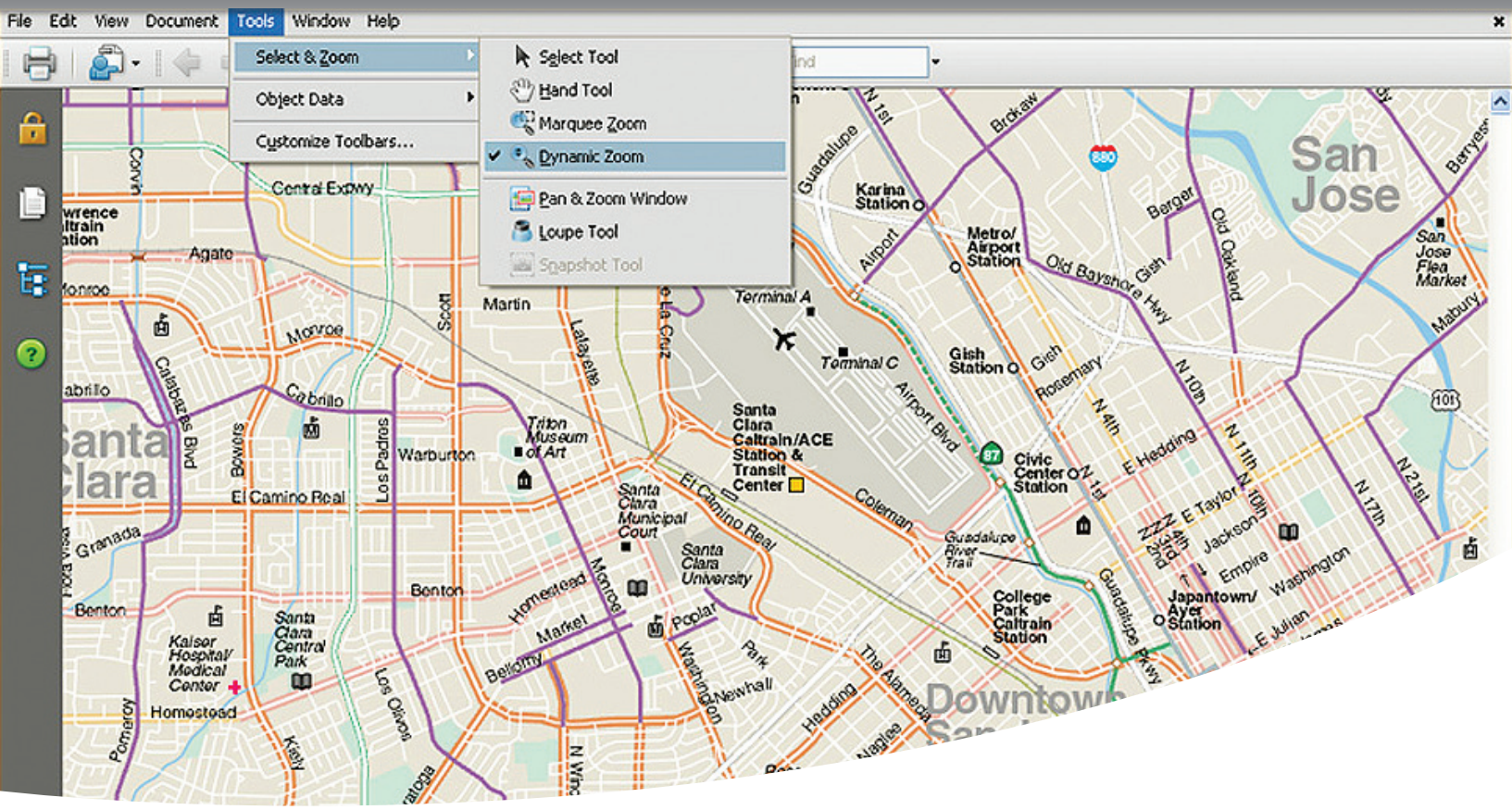
For more information, visit www.nvidia.com/page/handheld

IMAGERY COURTESY NVIDIA CORPORATION



Recently, ADOBE turned to NVIDIA'S GPUs for its ACROBAT 8 product. with an NVIDIA GEFORCE GPU, skimming through digital documents can be easier than with paper.

The processing power of the GeForce GPU allows for faster display of images and smoother, more fluid scrolling. Readers can instantly skip from one page to the next, quickly parse intricate charts and figures, and easily navigate even the most complex documents.

"The benefits and enhancements are immediately obvious," explains Pam Deziel, director of platform product marketing for Adobe. "Panning, scrolling, zooming…virtually every major function in Adobe Reader 8 that takes advantage of the GPU receives a tangible boost in performance. NVIDIA graphics cards let users do more with PDF files, and faster. Things people may have avoided in the past, such as detailed, zoomable maps, are now easily displayed. Reader 8 and NVIDIA's GPU puts users in a place where file size and performance constraints are more theoretical than actual."

"Panning, scrolling, zooming…virtually every major function in Adobe Reader 8 that takes advantage of the GPU will receive a tangible boost in performance."

For more information, visit www.nvidia.com/object/testimonial_adobe_acrobat8.html

IMAGES COURTESY ADOBE

The Digital Home Revolution

GeForce GPUs power PCs from virtually every PC OEM worldwide in desktops, notebooks, media centers, and now exciting media extenders like Apple's recently-launched Apple TV.

The Wall Street Journal aptly described Apple TV as a device for people who are "yearning for a simple way to show on their big TVs all that stuff trapped on their computers."

Apple TV allows viewers to transfer digital media, including photos, movies, and music from iTunes and other sources to their TV. Visual quality is crucial to the Apple TV experience, which is why Apple TV's 3D interface is enabled by NVIDIA GeForce technology, enhancing elements like album covers, movie titles, and screen saver images, as well as the intuitive Apple TV menu.

For more information, visit www.apple.com

IMAGES COURTESY APPLE

COMMITMENT TO EDUCATION

NVIDIA's Chief Scientist, Dr. David Kirk, pioneer of the NVIDIA Fellowship program, speaks with students and faculty at University of Illinois at Urbana-Champaign.

THE NVIDIA FELLOWSHIP PROGRAM, led by NVIDIA CHIEF SCIENTIST DR. DAVID KIRK, provides funding to PH.D. students who are researching topics that will lead to major advances in the graphics and digital media industries.

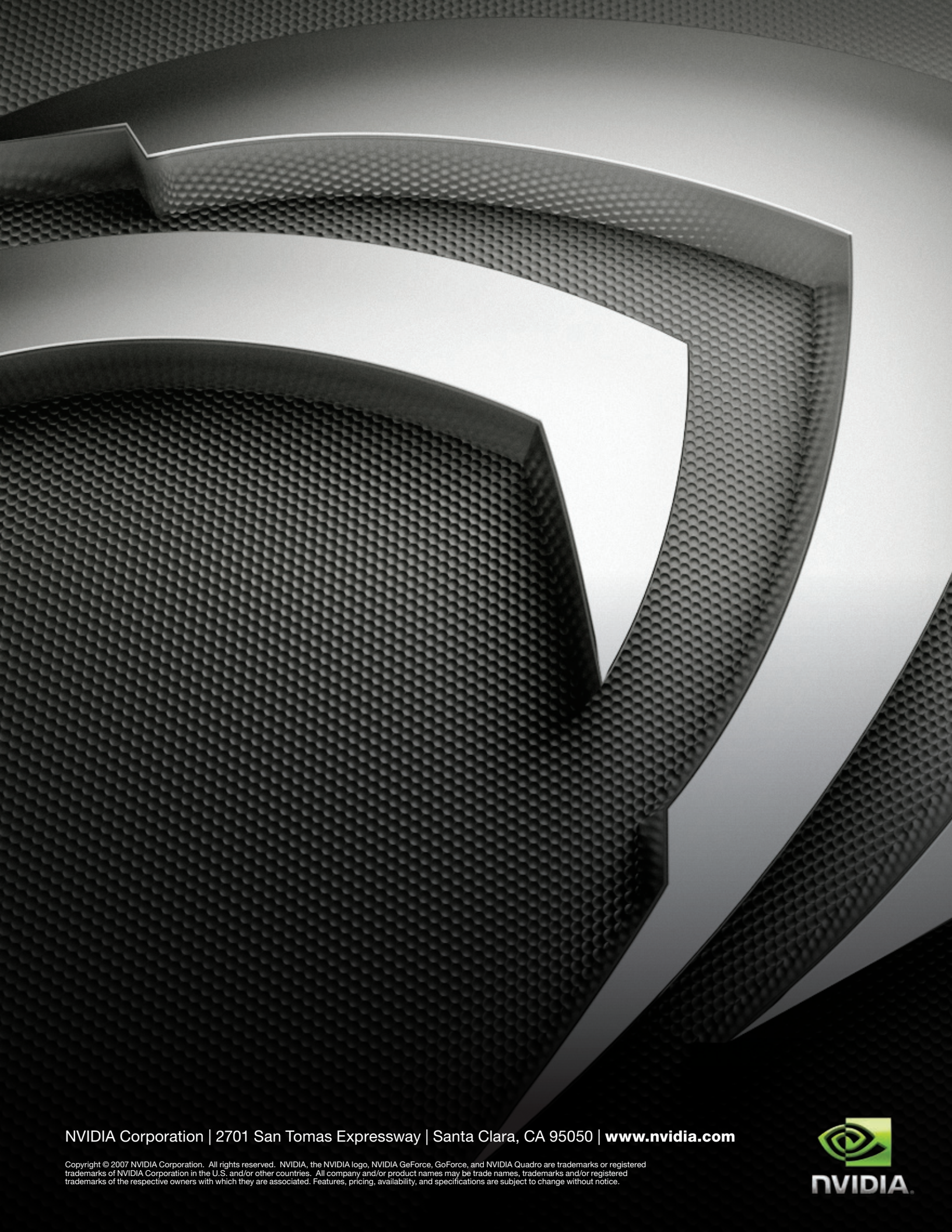
Recipients not only receive crucial funding for their research, but are able to have access to NVIDIA products, technology, and some of the most talented minds in the field. This year, each winner receives a $25,000 grant.

"The NVIDIA Fellowship award program is designed to stimulate and support excellence in graphics and computing research in universities worldwide and to promote communication between NVIDIA's R&D team and outstanding students and professors," said Dr. Kirk. "We believe recipients represent the best and most talented graduate students in the world."

Since its inception in 2002, the Program has awarded over one million dollars in funding to assist 56 Ph.D. students with their research.

IAN BUCK, AN NVIDIA FELLOWSHIP AWARD RECIPIENT AND CURRENT MEMBER OF NVIDIA'S SOFTWARE TEAM

"With GPU technology changing so rapidly, it is next to impossible to do cutting edge research without access to the latest hardware, as well as insight into where GPUs are going in the future. The NVIDIA Fellowship provided me with not only the hardware necessary to succeed, but also gave me the opportunity to collaborate with NVIDIA architects to ensure that my research would have an impact."



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