

SUCCESS STORY | AIXSPONZA

GPU-ACCELERATED RENDERING THAT KEEPS UP WITH THE CREATIVE PROCESS



Nike USA Inc. | NABD / Aixsponza



Aixsponza renders larger models faster than ever thanks to the power of NVIDIA Quadro GP100 GPUs.

BRINGING INCREDIBLE SPEED AND REALISM TO LIFE



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SUMMARY

- > Small VFX studio in Munich, Germany
- > Produces print and video ads for large clients under tight deadlines
- > GPU rendering absolutely essential to their work
- > Replaced consumer-grade GPUs with 4 NVIDIA Quadro® GP100 cards
- > Rendering times reduced by more than half

REASONS FOR QUADRO

- > 3584 CUDA® cores
- > Support for up to four monitors
- > 16GB HMB2 RAM
- > PCI Express 3.0 x16 interface
- > 5.2 TFLOPS peak 64-bit, double-precision floating point performance

Founded in 2006, the Aixsponza team of designers and technology geeks produces compelling visuals that tell stories and break down complex concepts. Specialties include motion graphics, 3D animation, visual effects, and graphic design.

For a typical Nike project, Aixsponza obtains an STP file from the client and imports it into Rhinoceros 3D for cleanup. Next, they tessellate the models using Mol 3D, and then import the tessellated polygon mesh into Maxon Cinema 4D as an OBJ file. This process preserves the naming and hierarchies from the original model, which facilitates updating parts as needed. Vertex and normal information are also preserved, thereby ensuring proper rendering of surface curvature. The powerful, GPU-accelerated Redshift renderer creates the final visuals.

The workstation used for the performance comparisons in this story consists of an Intel i7-5930K CPU, 64GB RAM, 250GB SD, and 1200W power supply running Windows 10. This machine was originally equipped with four GPUs: three NVIDIA® GeForce® GTX980s and one NVIDIA GeForce GTX1070.

CUSTOMER PROFILE



Organization
Aixsponza

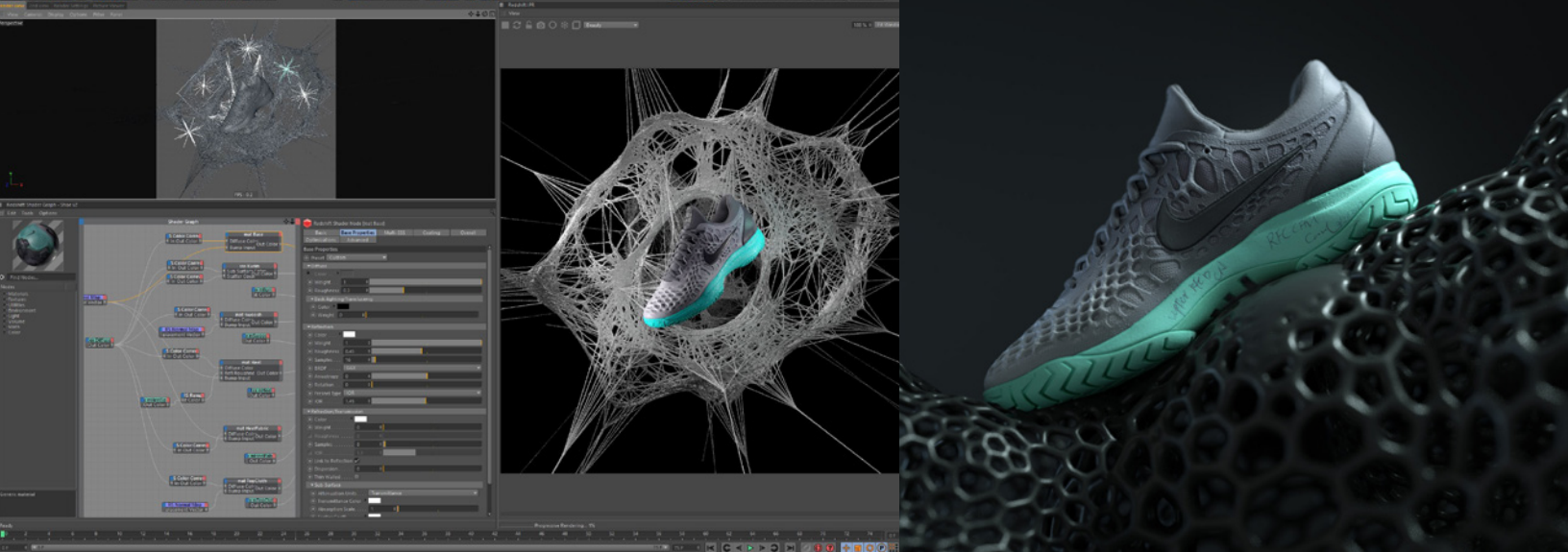
Industry
Animation and visual effects

Location
Munich, Germany

Founded
2006

Employees
8 employees and up to 30 freelancers

Website
www.aixsponza.com



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PIPELINE PRODUCTS

NVIDIA Quadro GP100

Adobe Photoshop

AfterEffects

CapturingReality

RealityCapture

Foundry Nuke

McNeel Rhinoceros

MOI 3D

Maxon Cinema 4D

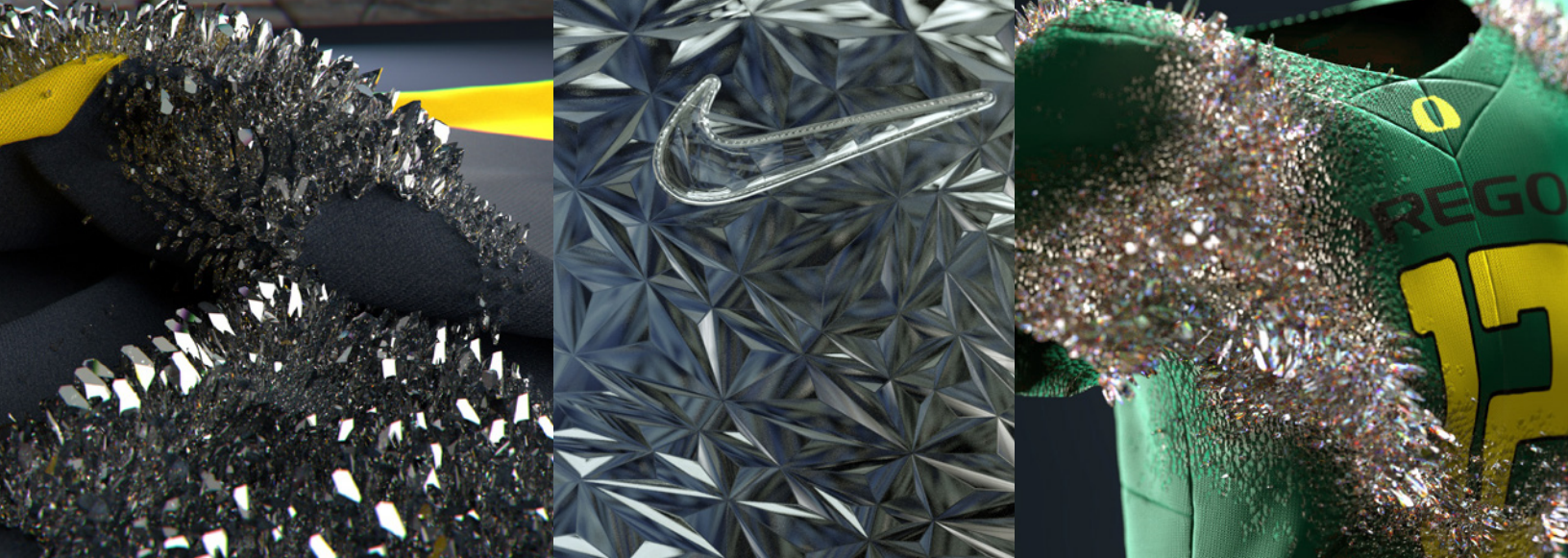
Redshift

SideFX Houdini

LONG ON DETAIL, SHORT ON TIME

Aixsponza works directly with the Nike offices in Portland, Oregon and Amsterdam, Netherlands in a highly iterative process and very tight deadlines. This process begins with an initial briefing, followed by scanning a sample shoe using photogrammetry to capture both the 3D data and the material. Diffuse, bump, and displacement maps in 8K resolution are required to capture the fibers. These extremely detailed maps are necessary because Aixsponza renders videos in 4K resolution and print ads in 14K resolution.

“Deadlines are very tight, and we need to begin producing results almost immediately,” said Matthias Zabiegly, Lead 3D and VFX Supervisor at Aixsponza. “For example, we need to create test animations in order to review the design and direction. We do all of our rendering in Redshift because it generates final-look results. GPU rendering is absolutely essential to our work. Even so, iterations take time. For example, a test Nike render required three minutes per frame. Sitting around waiting for a render to complete can foster an ‘it’s good enough’ attitude that reduces both the number of iterations and the creativity of the final result.”



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“One of my projects saw the Redshift render time per frame drop from eighteen minutes to seven and a half minutes with the GP100s.”

Matthias Zabiegly
Lead 3D and VFX
Supervisor, Aixsponza

ENTER THE NVIDIA QUADRO GP100

Aixsponza decided to replace the four consumer-grade GPUs in their primary workstation with four NVIDIA Quadro GP100 GPUs. This upgrade was as simple as replacing the cards in the PCIe slots, connecting the power and then the two monitors to one of the cards using HDMI, and finally booting up the machine and installing the drivers. Tesla Compute Cluster mode was also activated on the cards using a command line interface.

“One of my projects saw the Redshift render time per frame drop from eighteen minutes to seven and a half minutes with the GP100s,” continued Zabiegly. “The rendering speed for the Nike project I mentioned also doubled, as has scanning speed. Even so, these new cards never get very noisy, and the temperature does not exceed 65° centigrade under load. This is great, because the GPUs are installed in a workstation located on an artist’s desk.”



AGCO Fendt GmbH / Aixsponza

“Fast renders bring back the joy of creativity, which induces artists to tweak shots until they are truly happy with the results.”

Moritz Schwind
Art Director, Aixsponza

UNPRECEDENTED SPEED AND QUALITY

The speed and power of the NVIDIA Quadro GP100 GPUs are helping Aixsponza take on larger industrial visualization projects. For example, the GP100s allowed them to render the complete dataset for a Fendt farm tractor for the very first time. The model consists of 32 million polygons that allow close-up views of every component, plus approximately 5GB of high-resolution textures and HDRI environment maps—a dataset totaling 24GB in size.

“The 16GB of RAM in each GPU is very helpful for large visualization projects,” explained Schwind. “Exporting the whole Fendt dataset to the GPUs takes about a minute, and the near-immediate feedback we receive in Interactive Photoreal Render mode is amazing. We mainly use the GP100 GPUs for look development, which is why fast live previews are so important. Slow renders are tedious and increase the temptation to just leave things as they are. By contrast, fast renders bring back the joy of creativity, which induces artists to tweak shots until they are truly happy with the results.”

The NVIDIA Quadro GP100 cards stay busy long after the artists leave for the day. At night, the render farm adds the GP100 equipped workstation as another client, further increasing productivity across all Aixsponza projects.

To learn more about NVIDIA Quadro and GPU Rendering Solutions, visit:
www.nvidia.com/gpurendering

www.nvidia.com



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