MATTHEW PEREZ
SOLIDWORKS' *SOLID* EXPERT
CUSTOMER STORY

It was a clear and cool evening at the Lonestar Pavilion in downtown San Antonio when Matthew Perez was called onstage. Like thousands of other engineers and designers, the native of Blacksburg, Virginia was visiting the Alamo City for SolidWorks World 2011, an annual conference featuring educational and networking opportunities, as well as the latest in 3D CAD technology from over 100 exhibitors. But on this night, Matt was only one of a group of 550 invited engineers and designers certified by the product design software manufacturer, as either a "professional" or "expert." The occasion was the CSWE (Certified SolidWorks Expert) /CSWP (Certified SolidWorks Professional) Event. And although many of the other revelers were there to enjoy the buffet, the open bar, the live music, and to fire off Nerf dart guns (you had to be there), Matt was present at the very special behest of SolidWorks who wished to honor him for his significant contributions to the SolidWorks community. However, he had no idea as to what such an honor would entail. As he joined SolidWorks Certification Specialist Mike Puckett on stage, Matt listened humbly as Puckett extolled Matt's many contributions, and offered encouragement for him to continue with his endeavors. Puckett

Matt Perez: Focuses on *why* designers should model a particular way as opposed to simply *how*.

concluded his remarks by announcing that SolidWorks, courtesy of BOXX Technologies, was presenting Matt with a brand new 3DBOXX 4860 XTREME workstation, the world's fastest SolidWorks solution. As the image of the over clocked workstation and its impressive specifications were displayed across massive video screens flanking the stage, the crowd roared in approval, signifying that SolidWorks had succeeded in awarding Matt Perez a gift worthy of his talent and contributions.

Matt Perez has always had a fondness for modes of transportation in general and motorcycles in particular. He eventually parlayed his love of street machines into a job at a motorcycle sports shop where he worked in everything from part sales and service to mechanics. While still in high school, Matt was first introduced to Autodesk AutoCAD, the design and drafting application which opened his eyes to a potential career designing the high-powered machinery that so intrigued him. With that in mind, he eventually landed at Virginia Tech where he's currently finishing

up his degree in engineering. His progress toward completing that degree has been somewhat hindered however, since Matt is so busy with a host of other pursuits. It began when he was still a full-time student looking for a part-time job. He found it on campus in Transportation Research where he now works as a mechanical operations tech, designing and producing fabrication work for everything from injection molded plastics to mechanical assemblies.

"I enjoy complex surfacing and cosmetic parts, " Matt says, "and the vast majority of what I design ends up being electronic housings or fixtures for various things such as cameras, monitors and data acquisition systems."

Many of his designs are vehicle-mounted systems integral to recording data for transportation studies. For example, one particular study involved documenting the driving habits of newly licensed teenage drivers. Studies are commissioned by various sources and in 2009, it was one particular university study which required Matt to use SolidWorks, the 3D mechanical CAD program developed by Dassault Systemes SolidWorks Corp. Prior to that study, Matt had been utilizing Autodesk® Inventor®, NX Unigraphics, and other CAD software applications.

Since Matt also spends a good bit of his spare time with custom design work, he continued to rely on SolidWorks even when he wasn't doing university related work and immediately discovered a user interface and feature set that really spoke to him. In fact, he felt so in sync with the application that he began creating car models—an ambition he had long harbored. After three sufficiently adequate attempts which provided solid training ground, he struck gold when he produced a photo realistic 2010 Chevy Camaro. Documenting his SolidWorks experiences and work process, Matt decided to create an advanced surfacing tutorial of the project and made

Creating quick models: Most often, Matt begins his designs by working directly in SolidWorks.

it available for free online. The incredibly detailed, easy to understand, 296 page Camaro tutorial proved to be a hit among SW users and as its popularity has soared, Matt continues to create more tutorials (both video and written), making him a genuine resource for SolidWorks users everywhere. Much of his success stems from the fact that Matt focuses on why designers should model a particular way as opposed to simply focusing on how. The result is a complete learning experience (offered free of charge) which makes Matt's unique standing within the SolidWorks community very easy to comprehend. When asked how his role within the community has changed as a result of the famed tutorial, Matt seems rather unfazed by the attention. "I went from being a community member to becoming more of a name in the overall picture," he says. "Instead of answering questions, I am able to put a lot more generic info out there and reach a larger audience. I try to put stuff out on a pretty regular basis, but it's not an easy task to keep up with. Several users out there already put in tons of time and energy to help the community and I just want to be part of that and bring my perspective to the table."

Matt is quick to credit fellow designer and SolidWorks expert Bill Hamze with whom he operates a website devoted to the free tutorials.

"The website is doing great and Bill plays a key role in that," Matt says. "He puts his own time into the site because he enjoys helping like I do." Bill also oversees the Facebook page, while Matt manages a twitter account. Matt is also grateful for the contributions of fellow SolidWorks experts Josh Mings (www.solidsmack.com) and Alex Ruiz (www.theswgeek.com) for inviting him to "guest" on their influential websites. "Josh and Alex have really helped me in terms of getting my name and website out there to the community," says Matt.

The Creative Process

When creating his designs, Matt sometimes begins with rough, hand-drawn sketches, but most often, he begins directly in SolidWorks, roughing out sketches and creating quick models. From there he tweaks it, solving any existing design or engineering issues until he has a version with which he's comfortable. At that point, he starts from scratch creating

what will become the final version. It's this stage, he readily admits, which demands the most time and the majority of his attention. "It's usually a very iterative process which sometimes involves rapid prototypes, machined parts, or photo-realistic renders to decide the next direction," he says. And because most of his workflow is done directly in SolidWorks (from sketching and modeling to renders and motion/structural simulations), Matt is quick to point out the advantage of his new 3DBOXX 4860 XTREME workstation: "Because I don't bounce around between multiple software packages, having a fast computer is a huge benefit."

Going XTREME

Prior to his 3DBOXX 4860 XTREME, Matt's personal machine was an HP Pavilion home media PC, while the one supplied by Virginia Tech is a Dell Optiplex 755. Neither, however, was configured to run SolidWorks efficiently. Although he'd never witnessed a 3DBOXX demonstration, Matt had heard other designers and engineers speak in reverent tones of the BOXX workstations as the machine they would buy if they could—or if their employer would allow them to spec one. "Until SolidWorks World I was never able to see one for myself," he says. "And because I was never in a position to pursue a machine like this for work or home use, I didn't truly know the power."

With an over-clocked, six-core Intel® Core™ i7 processor capable of reaching 4.15 GHz, the liquid-cooled 4860 XTREME provides high-powered, multitasking performance for 3D/2D animation, modeling, compositing, visualization and motion media applications while its inclusion of NVIDIA Quadro 5000 GPUs offers groundbreaking performance, superior image quality, and a fully integrated and optimized workflow across all professional applications. The end result is the ability for digital artists like Matt Perez to create detailed designs in less time.
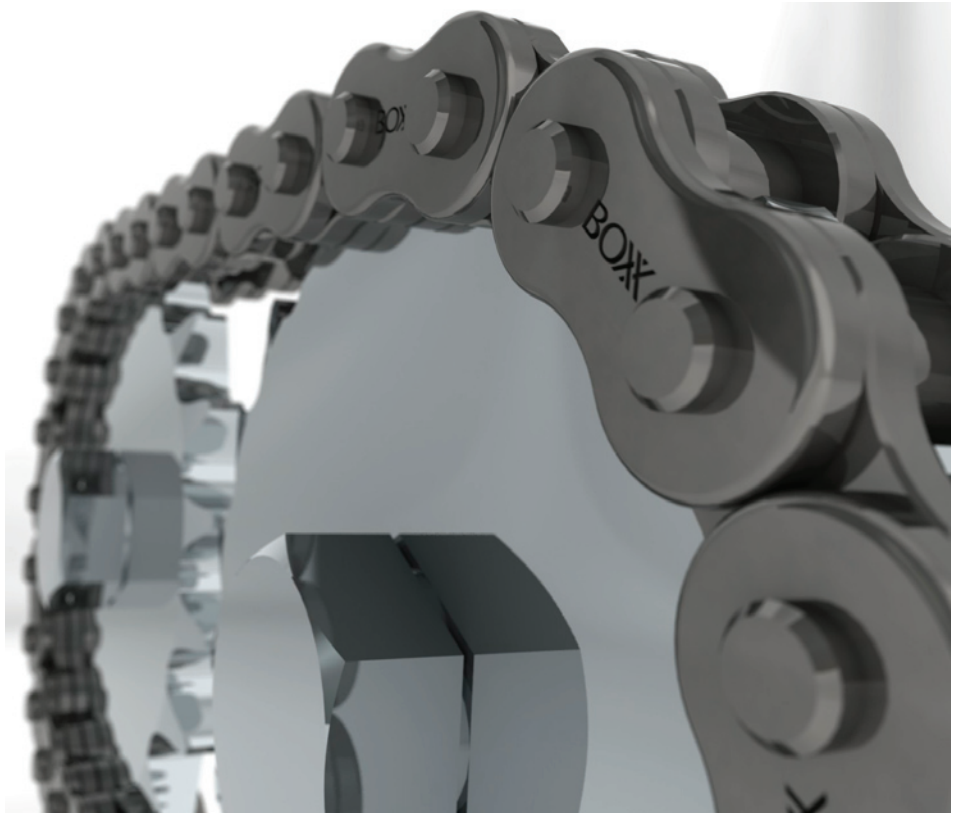
Animations and renders: Enabling non-CAD users to understand a product and its direction.

"The speed of the machine is instantly apparent," Matt says, "from how the model is moved around in the modeling environment— even with image quality settings really high and Realview graphics on, to complex operations and features calculated extremely fast. Updating models is no longer a waiting game."

Matt is particularly fond of the fact that he now has the capability for constant real time previews, providing him with better insight into how the design looks from different angles and under various light conditions, as well as eliminating the need to render every new aspect all of the time. But what impresses Matt the most is how quickly 4860 XTREME handles photo renders. "Renders that would take hours on my other machines take a minute, literally!" he says. "Max quality, depth of field, bloom, and a studio environment render with reflective metals in just a few minutes per slide. This means that the computer is no longer the bottleneck in the design process. The only limit is me."

Your computer should be able to handle the speed at which you model. The speed of the machine now means that I can push complex parts and assemblies without having to consider how it will drag the system down. Things like simulations and renders can be done without simplified models for representations."

Animation

After experiencing significant time savings on smaller scale renders, Matt decided to go all out and put his new 3DBOXX workstation to the test, creating an animated mechanical assembly of a chain and sprockets. He explains:
"Animating mechanical assemblies always takes a good bit of computing power, so having a powerful machine cuts down on delays. In the current market of product development where digital prototyping is a much larger segment (in contrast to older methods of physical prototyping multiple

revisions) it's necessary to get your design intent across clearly and quickly. Tools such as animations and renders are a way for non-CAD users to understand the product and its direction. Since SolidWorks needs to crunch all the physical interactions between components in a situation like a chain and sprocket, and render each frame, some serious delays could push back product development. Cranking out a high quality animation in five or six hours as opposed to 80 hours on other machines allows the designer a lot of freedom and flexibility to make changes and revisions within the same time line. I could work for eight hours on a complex assembly, setup my animations, and use the SolidWorks Scheduler to run multiple rendered animations overnight and have them ready for me the next day. This allows a single user to produce an excellent deliverable without the need for multiple machines or render servers."

Click to view Matt's Chain and Sprockets animation.

The Future

"Going from a small fish in a big pond to being invited to SolidWorks World was a shock to me," Matt says. "I never in a million years thought I would be that close to the action and it's amazing. I am just honored that my time and efforts are seen and welcomed. I wanted to branch out and reach a larger audience and I am amazed at how far it has spread. I knew going in to SWW that there was a big surprise, but honestly, I had no idea it would be such a sweet machine that was awarded to me. I know a lot of people were drooling over the machine at the CSWP party, but I wasn't able to see the specs on screen so I really had no idea until the next day. Even then I was still pretty much at a loss for words. Honestly, it still
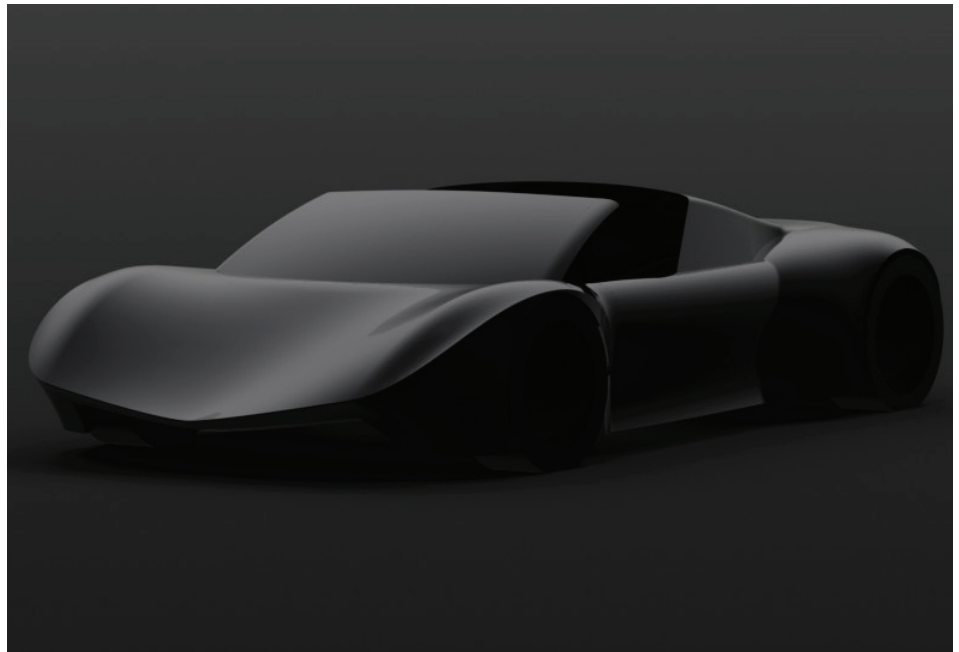
Big things on the horizon: Matt uses 3DBOXX and SolidWorks to create his latest automotive design.

feels like it happened to someone else."

In his immediate future, Matt is indulging in his passion for automotive machines (and SolidWorks) by creating automobiles for an upcoming car design competition. As for his long term plans, Matt says he'll be satisfied with having the freedom to design with SolidWorks and to continue to lend a helping hand to others along the way. And though some may look at Matt's recognition from SolidWorks as the deserved culmination of hard work and dedication, Matt sees his trip to the stage at SolidWorks World 2011 as merely the beginning.

"I have a little bit of side work starting soon and hopefully some big things on the horizon," he says. "Having such a proven machine at my disposal as well as all the publicity that came with SolidWorks World gave me a rare opportunity that most would dream of. I can now take my skills and new found efficiency and go on to the next level. I hope to diversify and do more contract work in the future—now that I know my computer won't ever hold me back."

Learn more about Mathew Perez and free SolidWorks tutorials at:
www.solidworkslessons.info

Learn more about 3DBOXX 4860 XTREME at:
www.boxxtech.com

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www.solidworks.com

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