Case study

University of Colorado Denver Digital Animation Center

HP Z Workstations bring animation to life

Industry
Higher Education and Media & Entertainment

Objective
Train animators and 3D artists to be creative collaborators whose deep understanding of art and command of the technology make them excellent candidates for employment in the marketplace

Approach
Equip students with HP Z Workstations in order to provide a professional-grade environment to prepare them for the real-world marketplace

IT matters
- Technology that is "transparent" to faculty and students, maintaining the focus on creativity, art and storytelling

- Technology that gives students the confidence to take the risks necessary to become true artists

- Provides students with experience and skills on the same tools used in real-world work environments

- A rich understanding of the full range of artistic endeavor in the visual arts, within the context of a full liberal arts education
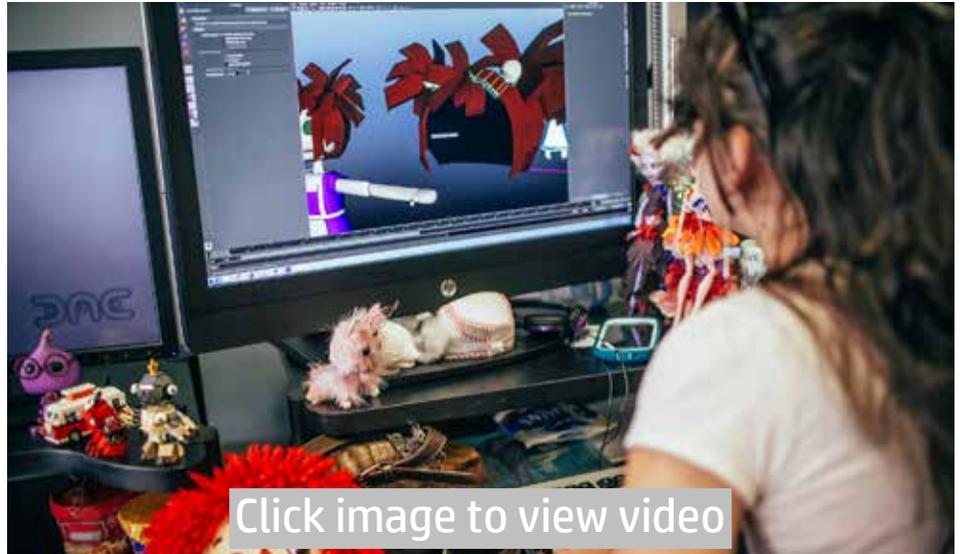
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> **"Without HP technology, we wouldn't be able to do what we do. Having a workstation that is reliable and dependable and can get the job done—that is a crucial element in our ability to prepare these students for the industry."**

— Tripp Vroman, instructor and technical director, Digital Animation Center, University of Colorado Denver

DIGITAL ANIMATION CENTER

College of Arts & Media
University of Colorado **Denver**

At the University of Colorado Denver's Digital Animation Center (DAC), part of the College of Arts & Media, students are trained to become well-rounded problem solvers and critical thinkers, with the goal of entering the workforce as leaders and managers in a range of industries including feature film, broadcast, scientific visualization, healthcare, and engineering.

Paul Conner, instructor and manager, industry relations for DAC, and Tripp Vroman, instructor and technical director of the DAC lab, equip students with HP Z Workstations in order to provide a professional-grade environment with tools that support and extend their creativity while preparing them for the real-world marketplace. Graduates earn a Bachelor of Fine Art degree with an emphasis in 3D Graphics and Animation.

Emphasis on collaboration

"What makes our program unique is our focus on collaboration," Conner says. "There's no better way to prepare the students for the working world than to immerse them in a collaborative work environment."

As part of the program, students form an in-house production team with the objective to complete a short film with high-production values over the course of three semesters. In the last few years alone, student films have been accepted for competition at 264 (to date) national and international film festivals and competitions. Some have been honored with Best Animation, winning 54 Best Animated Short, Best Digital Effects, and People's Choice and Special Jury Award prizes.

"This approach really shows students what it takes to work as a team, which is something that is not available through book learning," says Conner. "Students specialize in certain roles according to their strengths. The teams are large, which is challenging from a management standpoint. It really drives home the concept of 'playing in the sandbox nicely.'

"When they leave here, they have to know the entire pipeline and how to support it," he continues. "They need to know that what they do affects everybody. Nobody functions in a bubble."

Conner says this large-team experience is unique among animation schools. "It really gives our graduates a competitive edge," he says. "The foundation of core classes is essentially preparation for this capstone project. These collaborative skills are valued in the workplace."

HP Z Workstations Play a Crucial Role

"We are blessed to have one of the best, most well-equipped labs in the country," says Howard Cook, assistant professor, C/T at the Digital Animation Center. "It's really due to this ongoing relationship we have had with HP over many years.

"We strive to provide our students with the very best equipment," says Cook. "We go to great lengths to make sure that we're refreshing the technology frequently." That policy, he notes, has contributed to the school's ability to create complex, high-quality productions in three semesters by a crew of students.

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The school has a mix of HP Z640, Z620 and all-in-one HP Z1 Workstations spread throughout the DAC. Two labs are reserved for use by seniors only. Though there is a mix of workstations in those labs, the all-in-one HP Z1 Workstations are the most heavily used by seniors working on their capstone project. "They're speedy, robust machines. And we like the compact form factor," says Cook.

The HP Z640 and Z620 Workstations are the most powerful in terms of raw processing power. They are routinely deployed for major rendering tasks, including distributed rendering, and to run the most demanding software such as dynamic simulations.

Matching professional studio capabilities

Conner says that when the lab was established more than a decade ago, "our goal was to equip our lab like a professional studio. My research showed that what they were using in the real-world trenches was HP," he says. "I had many opportunities to talk to the people in those situations, and they told me that HP was really the way to go."

Today, graduates of the program working professionally report back to Conner that the DAC lab rivals some of the top studios in terms of technology. Still, Conner doesn't consider himself a technology-focused artist.

"It may sound strange coming from a person in my position," he says, "but in a creative situation, the technology ideally should just disappear. I don't want to know it's there. If I'm thinking about what the computer is doing, it hinders my creative process, and takes away from my focus on bringing life to the characters or whatever I'm working on."

Part of that transparency is based on reliability, according to Instructor and DAC Technical Director Tripp Vroman. "The HP Z Workstations are extremely reliable," says Vroman. "That reliability is the fruit of HP's partnership with NVIDIA® and the Windows® operating system. With those three components, the result is a very dependable and high performance machine. HP tech support, on the rare occasions we've needed it, has been very responsive."

The DAC currently uses more than 80 HP Z Workstations. Vroman notes that the HP Z Workstation's efficient power supply, along with ENERGY STAR®-certified configurations and HP WattSaver, helps save on energy costs. Intel® Xeon® processors deliver robust power and energy efficiency with Intel vPro technology supporting remote manageability.

HP Z Workstations run the Adobe® Creative Cloud. Autodesk® Maya, Pixologic™ ZBrush, Side Effects Houdini, and Chaos Group V-Ray

are also frequently used, as is the school's three full motion-capture stages that runs Vicon Blade software.

The university has confidence in HP Z Workstations because they are certified for use by the major software vendors. "When HP gets together with other companies and makes sure their applications work with the hardware, I see the results first-hand," says Vroman. "HP is always on top of that compatibility, and the result is a workstation that is extremely stable. Our philosophy is that the faster and more reliable the workstation is, the easier it is for the students to forget the technology and concentrate on the art."

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Vroman takes full advantage of the flexibility HP Z Workstations offer. "Our studio does not use large servers," Vroman says. "We rely on our HP Z Workstations to do our rendering, rather than farming our rendering out to other companies."

Customer at a glance

Application
Arts and Media technology curricula for the entertainment industry

Hardware
• HP Z640 Workstations
• HP Z620 Workstations
• HP Z1 Workstations

Software
• Windows® Professional
• Adobe® Creative Cloud
• Autodesk Creation Suite
• Pixologic™
• Chaos Group V-Ray
• Qube! Render Farm Management software
• Viacon motion capture software

HP Z640 and Z620 Workstations are the workhorses that handle most rendering for the DAC. Sometimes the program will reserve some processing cores for light student use during the day, then take over all the cores for heavy rendering tasks overnight. "That's the big advantage of having all those processing cores," says Cook. "We can scale up or down for rendering needs."

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Vroman says the DAC uses Qube! Render Farm Management software to manage rendering, which allows it to maximize efficiency and throughput when crunch time comes at the end of the school year.

Success Breeds Success

The best part of his job is seeing the students succeed, says Vroman. "Our students are getting great positions at renowned studios, and they're happy and making good money," he says. "That translates into excitement here at our lab."

"Recruiters tell me on a daily basis that they value the kind of production experience that a seasoned professional would have," says Conner. "They tell us that our students are coming in with fresh ideas, but they also know how to work in a collaborative environment. That makes them a lot easier to hire, and more successful once they do begin working."

Adds Cook, "We're really simulating exactly what our students are going to be doing in the industry. And our workstations are a big part of that. Knowing that the HP Z Workstations are capable of handling whatever we throw at them gives everyone the freedom to concentrate on creative choices."

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