

GREAT NORTHERN WAY CAMPUS



Photo Courtesy of Masters of Digital Media Program, Great Northern Way Campus

The Masters of Digital Media Program at Great Northern Way Campus Prepares Students to Excel In Next-Generation Interactive Digital Media

“When our graduate students view films such as Shrek or play video games such as Halo 3, they get more than blockbuster entertainment - they get career inspiration...”

– Dr. Gerri Sinclair
Executive Director, Masters of Digital Media Program,
Great Northern Way Campus

Students in the Masters of Digital Media Program at British Columbia’s Great Northern Way Campus want to change the world of digital media. They’ve enrolled in the Masters of Digital Media Program at Great Northern Way Campus because it is the first program of its kind in Canada to offer a full-time professional graduate degree that provides students with the curriculum, resources, facilities and industry experience to earn an advanced degree in interactive digital media. Its graduates will be poised to become the next generation of leaders in digital animation, video game creation and other virtual world technologies. Their degrees will be jointly awarded by Vancouver’s four major post secondary institutions: the University of British Columbia, Simon Fraser University, Emily Carr Institute of Art + Design, and the British Columbia Institute of Technology.

Built with input from world leaders in digital media, the groundbreaking program addresses crucial elements in entertainment technology. These include work in such areas as interactive narrative, immersive/virtual worlds, spatial and temporal domains and 2D and 3D rendering.

“Our program joins technology with art,” said Dr. Gerri Sinclair, Executive Director of the Masters of Digital Media Program at Great Northern Way Campus. “We are helping to meet the growing demand for talented senior professionals in an industry where knowledge of leading-edge technology and applicable artistic experience is hard to find. Our students are here to excel in this growing field so we are dedicated to providing the highest level of technology on which we unleash their tremendous potential.”

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Commitment to Excellence

This commitment meant that in developing the Masters of Digital Media (MDM) Program, Great Northern Way Campus needed to find hardware that could deliver the performance density, speed and data storage requirements required for integrated rendering solutions. The standards set for their labs had to address three essential criteria:

- Leading animation software, of the type that students use in the Masters of Digital Media Program, calls for extremely large, high-definition files, frequently several megabytes in size. A scene file, for example, may generate up to 100 to 200 multi-megabyte image files, creating a quantity of data that could create a bottleneck and, ultimately, slow down production.
- Additionally, students are tasked with delivering professional-grade results, so the tools must deliver the level of production values audiences have come to expect.
- And, in addition to handling the massive data quantity and complexity inherent in producing visual effects and game development, the system must offer fast iterations and turnaround times so that students can meet deadlines.

The MDM Program at Great Northern Way Campus found the answer in a team of technology leaders uniquely able to meet each of the requirements. The program's render management solution is based on SGI Digital Content Production Solution featuring SGI® Altix® XE servers and PipelineFX® Qube!™ scheduling and render farm management software. The solution was deployed by data management specialist Seven Group Digital Media, a leading IT and Media systems integrator and strategic partner of SGI. In conjunction with faculty and management plus input from MDM students, the team created the foundation for the students' future.

“We built the program from the ground up and we had the luxury of working with a blank slate,” said Mark Lange, Director of Technology at Great Northern Way Campus. “Since the program was designed by experienced industry professionals who understood the wisdom of not

compromising on any aspect of the technology, we were able to select exactly the right hardware and software to equip our students for success so that they can bring their vision to life. The team of SGI, Seven Group and PipelineFX are not just meeting, but exceeding our needs.”

Essential Tools for Design

The SGI Digital Content Production Solution is designed to integrate with and enhance the performance of PipelineFX Qube!. Highly customizable and extensively scalable, Qube! can be integrated into any production workflow and is the leading enterprise-class render farm management system for film and game production. At Great Northern Way Campus, Qube! runs on powerful SGI® Altix® 310 servers based on Intel® Xeon™ processors, which deliver the highest possible level of performance density, processing speed and I/O, to produce a solution uniquely capable of handling the very large data sets and output images that the students produce.

“The render management solution is designed to help the MDM Program produce talented animators, lighting artists and modelers,” said Jim Mukerjee, Manager Digital Content Management Solutions at SGI. “The students have only a few weeks in each course to meet their goals, so time is a precious commodity. Their render farm enables them to meet their goals as quickly as possible. The more iterations they can do on a project, the better it will be, and by having an efficient render farm running on the fastest, most efficient hardware possible, we provide optimized workflow.”

“The system definitely delivered the speed we were after,” said Mark Lange. “Students were able to render and composite frames a minimum of forty times faster than they would have been able to do on desktop machines.”

Success from the Start

The inaugural class of the Masters of Digital Media Program began in September 2007. Armed with MAC or PC laptops powered by the render farm, students were up and running on the first day of class.

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Courses throughout the 20-month program put students' artistic, technological and management skills to the test. Enabled by the SGI solution, students use text and sound as the stimulus for development of visual narratives through shape, color, line, texture and composition, and cultivate essential art direction skills through photo essays, storyboards, animatics, character design, costume design, lighting design and cinematography.

The SGI Digital Content Production Solution also helps students hone their skills in the mechanics and processes of game design and, in a course called Building Virtual

Worlds, makes it possible for student teams to design and implement an artifact in a virtual world environment.

Students in the MDM Program fine tune their project and business management skills as well as their artistic and technical expertise. The curriculum includes industry-funded projects with external clients and real time deadlines and deliverables as well as paid internships. With these true-to-life experiences under their belt, students will be prepared for the final phase of their education – working in a challenging and rewarding career in the digital media or entertainment technology industry.

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Art Meets Technology

One recently completed project illustrates what happens when teams of gifted artists are given an assignment that taps into their creativity and then are provided with the technological tools to bring their vision to life.

The eight member teams were tasked with creating a film of up to ten minutes. One team explored the Greek myth of Charon ferrying the dead to the afterlife across the river Styx.

Recognizing that the topic lent itself to an eerie, atmospheric background, the students turned to graphics and animation to create the desired effect. Much of the post production work was accomplished using the render farm. “The Crossing” has since been short listed for the prestigious Webby Awards.

“There was a temple scene, a water effect, a fog effect...all those elements needed to be modeled, animated, textured and rendered using the render farm,” said student Tarek El-Eryan.

The students had five weeks to complete the ambitious project. During that time, El-Eryan said, the render farm was in use almost constantly. “We had 10 nodes with 80 processors to work with,” said El-Eryan. “I don’t think they rested for more than 12 hours during the entire project. The end result was an artistic achievement worthy of entry in independent film festivals.”

“We wouldn’t have been able to tell the story as well as we did without this solution,” said El-Eryan. “We couldn’t have composited all those environments without 3D images. We couldn’t have pulled off the scope and visual style we ultimately achieved if we had been relying on live footage.”

“The projects would not have been completed on time without the render farm,” added Dr. Sinclair. “The students were able to up the complexity of their assignments and still make the deadlines.”

Performance Plus Savings

Solutions that enable such complex projects can take their toll on the data center, generating increased heat and power consumption and creating challenges for centralized data management with Network Attached Storage (NAS). This was another area in which the SGI system delivered value.

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“We save both space and money with the SGI solution,” said Mark Lange. “The small footprint takes up less data center real estate and the heat and power savings are significant. Not only that, management is simplified.”

In addition to the five SGI Altix 310 servers in the render farm, a key element to its success has been the SGI® InfiniteStorage solution. With as many as 75 students engaged in data-intensive pursuits using the system at any given time, storage capacity could have been strained. The SGI solution handles the load with ease, providing high capacity for large data sets and data consolidation.

“In the real world, animators are expected to deliver projects in breakneck time. The scenarios we posed gave students a taste of the professional world. Without this rendering solution several of the projects would have missed their deadlines. Were we actual clients, they may have lost the job or contract,” added Dr. Sinclair. “The students were able to up the complexity of their assignments and still make the deadlines they will face after graduation.”



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