DIGIPEN INSTITUTE OF TECHNOLOGY - OFFICIAL NEWSLETTER

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Screenshots from Narbacular Drop

Narbacular Drop: IGF Contender

Students in DigiPen's Real-Time Interactive Simulation and 3D Computer Graphics programs joined forces last spring to launch their wildly inventive game, "Narbacular Drop." The game created a buzz among hard-core gamers and industry insiders, and is a strong contender in this year's International Games Festival. Collectively known as Nuclear Monkey Software, the development team included programmers Jeep Barnett, Dave Kircher, Garrett Rickey, and Kim Swift, and artists Eric Brown, Paul Graham, Scott Klintworth, and Realm Lovejoy. While they wait to find out how their game stacks up against their global competitors, the team, minus Eric Brown, are at work on a top-secret project for Valve Software of Bellevue, Washington. So what can fans of "Narbacular Drop" expect in the future now that the team can draw on the resources of Valve, one of the leading video game companies? Product manager and programmer Jeep Barnett says, "Narbacular Drop is what got us noticed but everything beyond that is behind closed doors for now." But Barnett is quick to add that "Narbacular Drop" should keep even avid gamers busy for awhile. The game's popularity continues to grow and the team's website, www.nuclearmonkeysoftware.com, now registers hundreds of downloads a month.

For those who haven't yet played this challenging game, "Narbacular Drop" is an environmental puzzle game in a fantasy setting that features cartoony graphics and intuitive game play. The key feature of the game is the Portal System that allows players to avoid traps, maneuver around obstacles, and solve puzzles in the game's dungeon environment. The player controls a Princess character who has been captured by a demon and trapped in his dungeon lair—a sentient dungeon known as Wally. Wally has the ability to open holes, called Portals, on his walls. These Portals connect to each other, and any object moving into one Portal will come out the other. Likewise, when looking into one Portal, the Princess sees out the other. Wally is resentful of his demon captor, so he joins with the Princess to help her escape. In exchange, she agrees to free Wally by directing his Portal power to vanquish the demon.

Nuclear Monkey Software's Portal System introduces a technical innovation that has never before been the central focus of a game. The function of the Portal System means that two interconnecting Portals can be freely placed by the player. The added feature of moving through the Portals allows for limitless gameplay possibilities. Players can toss boxes, boulders, or even themselves through the Portals and around the dungeon. The game challenges players to come up with their own unique, creative solutions for the puzzles presented. The non-violent game has been developed for the Windows 2000/XP PC and would receive an E for Everyone rating. DigiPen wishes Nuclear Monkey Software good luck in the International Games Festival. Stay tuned to find out how the team fares!

Royal Winchester
Art Department

Royal Winchester, the son of an Air Force officer, grew up across the United States and in Belgium and Germany. He received his B.S. in physics from Purdue University in Indiana and entered the Air Force upon graduation. During his service, Royal worked at the Air Force Weapons Lab in New Mexico on the Strategic Defense Initiative (SDI) as a Tracking Systems Analyst. He developed targeting and tracking for ground and space-based laser systems and managed civilian contracts, including one with PIXAR before the company developed into the foremost animation studio in the world. Royal was ultimately selected for a position in Air Force Pilot Training and distinguished himself as the commander of his training

class. He received one of only two fighter pilot slots offered his class, and after another year of training during which he earned the position of "Top Gun," Royal moved to Japan to fly the premier military fighters, F-15 Eagles. At the end of his two-year tour, Royal returned to the US, and flew the C-141 long-range aircraft all over the world, including Siberia, Somalia, Guinea Bissau, New Zealand, Benin, Thailand, and even Antarctica! During his time flying C-141s, Royal's enduring love of computer graphics became a serious pursuit. He made a 20-minute live-action and CG film honoring the legacy of the C-141 aircraft, the workhorse of the U.S. air fleet.

In 1998, Royal left the Air Force with the rank of Captain to work as

a freelance graphic artist and web designer. He later moved to Seattle to enroll at the DigiPen Institute of Technology. Royal graduated in 2002 as the first student in the art program ever to be school valedictorian. After about 18 months working at Sierra Studios on SWAT 4: Urban Justice, Royal returned to DigiPen as the lead 3D instructor. He primarily teaches Maya and Max, the two industry standard, full featured, high end 3D modeling and animation packages, which together account for over 90% of all game and feature film 3D art assets. But Royal teaches a variety of 3D related disciplines, including modeling, texturing, rigging, animating, special effects, lighting and rendering. As one of only a handful of certified trainers

Professor Royal Winchester

in 3DS Max in the world, Royal was invited to be the keynote speaker at the European MultiMedia Madness Conference held in Belgium last summer. Royal lives in Sammamish with his lovely wife, Andrea, and his beautiful daughter, Skaeya. Besides devoting attention to school-related 3D work and some photographic projects, Royal enjoys spending time with his family.

Students Present at Academic Seminar

Three DigiPen students, juniors Josh Beeler, Habib Loew, and David Siems, presented their original application of numerical analysis in video game programming at last month's Pacific Northwest Numerical Analysis Seminar held at Western Washington University. Their presentation described the numerical stability challenges they faced during the modeling of mass-spring dynamics for their game, "Ivar's Adieu." The

paper was enthusiastically received by the seminar's participants, which included mathematicians from the University of Washington, the University of British Columbia, Boeing, and other academic and industry experts. The presentation served as a springboard for a lively discussion concerning the teaching of numerical analysis, and the role of games in demonstrating its practical application.

The Team Slepnir robotic vehicle uses Folsom's stereo-vision system.

Professor Tyler Folson

Game Developers Boot Camp

DigiPen launched Game Producers Boot Camp, its first professional development seminar in game software production in November 2005. Mark Long, CEO of Zombie Studios, and Professor Christopher Erhardt (Game Software Design and Production). kicked off Game Producers Boot Camp with a number of practical presentations that drew on their vast industry experience. Boot Camp provides an opportunity for industry professionals and interested individuals to explore the challenges of large scale projects. Topics covered this year included: using sound production facilities, understanding differences in motion capture techniques, and managing large production teams. Next up for Boot Camp 2006 are topics ranging
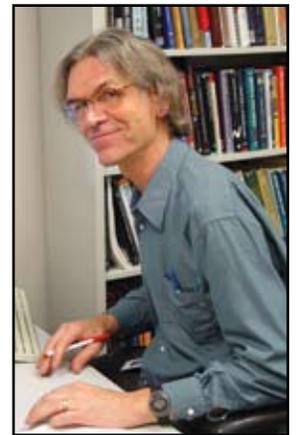
from the legal aspects of game production to the nuances of running independent studios. Make sure not to miss out on next year's Boot Camp! Sign up for more information via e-mail at: continue@digipen.edu.

Mark Long, CEO of Zombie Studios, speaks at seminar

DigiPen Prof Develops Vision System

Professor Tyler Folsom, an expert on artificial intelligence, was hard at work last year creating a novel visual system for a robotic vehicle entry in the Defense Advanced Research Projects Agency (DARPA) Grand Challenge. Participants in the Grand Challenge, a 240 kilometer race across the Mojave Desert, competed this past October for a two million dollar top prize. Winning vehicles were required to be fully autonomous and had to complete the course in less than ten hours. While his team's entry, a modified Kawasaki all-terrain-vehicle, was not selected as a finalist for the race, Tyler's efforts toward perfecting his stereo-vision system have yielded a major breakthrough. He now reports

achieving his objective of creating machine vision in real-time. His system permits robotic vehicles to navigate using images as the primary means of range-finding and obstacle detection. The software consists of approximately 6000 lines of C code, while the hardware—a 1280 X 1022 camera with a mirror system— outputs a DirectX compatible list of 3D line strips. This innovation, in combination with an algorithm Tyler has optimized, allows robots to 'see' their way across a course in a fast and accurate way. Currently, Tyler is preparing his results for publication and foresees a number of possible commercial and military applications for this technology.

DigiPen at ACM Programming Contest

Eight DigiPen students participated in the annual Association for Computer Machinery (ACM) International Collegiate Programming Contest held November 5th at Western Washington University in Bellingham. This prestigious global challenge pits teams of college students against each other in a competition to create software systems to solve intricate mathematical and logical problems. This year was DigiPen's fourth year of competition in the Pacific Northwest Division and saw the school turning in its best performance ever, with its top team ranking 22nd out of a field of 73 competitors. Congratulations to this year's participants for making it through another grueling event. More information on the ACM Programming Contest can be found at the contest home page on the web: http://icpc.baylor.edu/icpc/.

Castles and Kings: DigiPen Chess Club

DigiPen's Chess Club meets in Carr on Fridays from 4 p.m. to 6 p.m., and is open to all DigiPen students and faculty. The club provides chess sets (boards and pieces), but for timed games, players have to bring their own chess clock. As club president Jon Junker says, "Whether you desire serious competition or just fun play, come challenge the best chess players DigiPen has to offer from students and faculty. Traditional chess, blitz chess, four-player chess, we do it all." Some members, like Adam Henderson, are combining their chess play with their programming studies to write chess programs. Other members, like Professor Matt Klassen (Mathematics), are extending their activities beyond DigiPen to help organize chess lessons for the Muscular Dystrophy Association (MDA). In the spring, the Chess Club hopes to organize DigiPen's first Speed Chess Tournament. New member, Professor Michael Aristidou (Mathematics), organized the first Speed Chess Tournament at Louisiana State University, where the winners received—what else?—chess books! For more information, contact Jon Junker at jjunker@digipen.edu.

Summer Job With DigiPen

Since 1994, DigiPen has been offering a summer workshop program that is aimed at introducing students to the world of game programming, 3D animation production and robotics technology. Last year, DigiPen taught about 1500 middle and high school students across the U.S. as well as Canada, New Zealand, Jamaica, and even Norway. This year's summer program is expected to be much larger, with new confirmed locations in major city centers such as New York, Boston, and Chicago. The workshops are not only a great opportunity for these younger students to learn about what it takes to work in the industry of digital interactive entertainment, but they are also a great summer job for DigiPen students! According to Raymond Yan, Senior VP of Operations at DigiPen who also oversees DigiPen's outreach efforts, "Our own students are the best source of manpower for these workshops as they are highly capable and passionate about the work. For the instructors, they get a good paying summer job in their field of study that even provides the opportunity to travel, so it is a classic "win-win" situation for all involved."

An information session for DigiPen students interested in joining the 2006 DigiPen ProjectFUN Summer Workshop team will be held at the end of January 2006. The specific date will be determined early in the new year. For any immediate questions, please contact Masayo Arakawa, at masayo@digipen.edu.

STUDENT SPOTLIGHT

Michelle Guse
BFA - First Year Student

Michelle Guse, a first-year student in the BFA program, chose DigiPen after completing her B.A. in Psychology at the University of Calgary. Originally from Red Deer, Alberta, Michelle has easily made the transition from Canada to the American Pacific Northwest. Besides being an avid videogamer, Michelle enjoys speaking German and is a fan of Pop-Art. Michelle's first-person account (below) reveals how the intense curriculum and hands-on training students receive at DigiPen prepare them for an industry that demands constant innovation and creativity.

"Academic enrichment and progress has always been important to me. But even with a B.A. degree from the University of Calgary, I was unprepared by my undergraduate training to enter this highly competitive field. I possessed a drive for humanities studies, but lacked research experience with professors. I definitely wanted to continue studying, but I had to funnel my enthusiasm into another passion. DigiPen appeals to me because of its unique focus on interactive entertainment. It's thrilling to learn about how images, characters and narrative are successfully fused into video games. Like many other schools, the University of Calgary had a huge student body, overloaded classrooms and a small handful of professors who gave students meaningful and practical tools. While I gained invaluable critical thinking skills during my years there, I still yearned for small class size and dedicated professors. DigiPen meets my needs—and more. The professors at DigiPen are passionate about what they bring to the students. They maintain a rigorous academic program, while also offering a lot of support for more senior students, to prepare them for a career. Even as a first-year student, I find that I'm being given specific and useful information that I can apply to my chosen profession. On a daily basis, the DigiPen experience has been likened to being in a monastery. Physical, mental and emotional discipline are of the utmost importance. The workload as an art student has proved challenging, but is not without incredible rewards. I'm confident that my continuing education will lead to a career in which I'll continually flourish and explore."

Student Association President's Corner

DigiPen's Student Association had a busy month in November, both in activities and in meetings. After coming to a resolution on the budget with help from Raymond Yan, Senior VP of Operations, we were able to host two amazing activities that had a great turnout. The biggest event was our Teachers vs. Students Counter Strike Tournament, with 82 participants and over 100 attendees. I would like to thank and congratulate the faculty: Professor Charles Duba (Physics), Gordon Dutrisac (Student Services Director), Professor Chris Erhardt (Game Software Design and Production), Professor Matt Mead (Computer Science), and Professor Erik Mohrmann (Physics) not only for being good sports, but for winning this year's tournament 10-4 (scoring 81-59). The faculty team didn't go unanswered, however, as two student teams, the Penetrators and the Defenders of Communism, blanked the teachers 10-0. Eight DigiPen alumni who are currently employed by Valve Software in neighboring Bellevue, Washington also showed up to play and support DigiPen's current students. I'm glad they all could make it.

The Campus Entertainment Commission's second event, the Xbox 360 launch night, was a standing-room only success. The CEC crammed more than 50 people into the Carr classroom to test out and enjoy the new hardware. CEC is doing an excellent job this year of organizing events, and if you see anybody on that committee, please let them know how much we appreciate all their programming work. None of these events could have taken place without their dedication.

For December, the Student Association will be revising our interim constitution to include the new club handbook. We have finalized the process for becoming an official club, and you can pick up a handbook in the office anytime. Also, thanks to all those who attended the December 1st Student Association Open Forum. Your contributions help everyone make DigiPen a great place to learn.

I want to wish everyone a great finals week, and a wonderful holiday season.

Russ Wardinsky
Student Association President

Fall Preview Day a Success

DigiPen's 2005 Fall Preview Day was held on Saturday, November 7th. We had a great turnout with well over 200 prospective students and their parents visiting the campus, meeting with staff and faculty, viewing student work, and touring our facilities. Some of our guests came from as far as New England, while the majority came from the Pacific Northwest. Participants were impressed by the intensity and rigor of our educational programs and left Fall Preview Day with a clear understanding of what it takes to be admitted to and remain successful in our various undergraduate and graduate programs. The feedback from the event was very positive, with visitors enjoying the chance to see first-hand DigiPen's dynamic offerings in Real-time Interactive Simulation, Computer Engineering, Computer Science, Production Animation, and 3D Computer Animation. DigiPen's next major event will be the annual Career Day on April 7th, 2006 that will have employers from the industry visiting the campus to check out the work of this year's graduating class.

Evil Physics Monkey Brain Teaser

This month DigiPen introduces a twisted brain teaser from Professors Charles Duba and Erik Mohrmann. The first student to supply a correct answer to either instructor via e-mail (duba@digipen.edu or mohrmann@digipen.edu) will win a DigiPen t-shirt of his or her choice, and bragging rights for having (temporarily) conquered the Evil Physics Monkey. Now get to work!

"The Evil Physics Monkey is hard at work one day, a big sprawl of monkey fur and scimitar sunning itself on a lawn chair. After a few hours of such hard work, the malefic primate devises an infallible plan for infiltrating Green Base. He immediately hops out of his chair to begin his plan. He starts by using his monkey fists to rough up a cadre of clowns and take their balloons, which he then ties onto the lawn chair. Remembering a previous tale of a similar disaster, the monkey makes sure he takes some ballast with him in the form of a full X-treme Big Gulp from 7-11.

Unmooring his improvised airship, the monkey slowly pours out some of his drink until the lawnchair rises from the Earth and begins to float downwind towards the Green Base. Unfortunately for our furry fiend, the lift that takes him off the ground continues to carry him high into the sky. He does not realize just how high he is until the Code Red in his half-full X-treme Big Gulp freezes solid.

Although the Evil Physics Monkey eagerly dives from high places scimitar-first, his present altitude dissuades even his demented mind from doing so. He realizes he will be unable to infiltrate the base as he had planned. His momentary depression is lifted when he sees a speck down below that the monkey assumes MUST be the Green Sarge himself. The monkey wants nothing more than to toss his drink so that it lands on the Sarge's head. Unfortunately he has lost all feeling in his frozen paws, and can do nothing more than jab at it with his scimitar to give it the proper trajectory so that it will land on the head of the unwitting Sarge below.

The mug is a 500 gram hollow cylinder 20 cm in height. The bottom half of that cylinder is filled with a 1kg cylindrical block of frozen Code Red. Assuming that the monkey pokes the cylinder at the moment it begins to fall, and that the monkey is exactly 10,000 feet above, 100 feet south, and 20 feet east of his target at 60 degrees north latitude, what impulse must the monkey deliver to the mug (and where must he deliver it) so that it rotates half a turn to land upside down on Sarge's head? Assume that a passing Spherical Cow has somehow nullified air resistance in the local area."
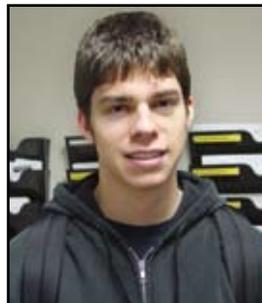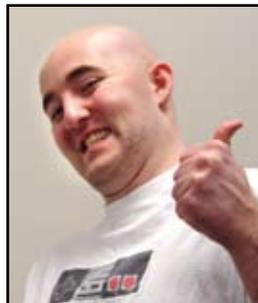
RANDOM QUESTION

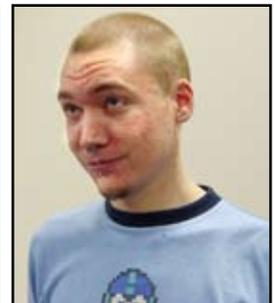**Which sport would cause you great pain if you were forced to watch it for a whole afternoon?**

"Marathon Running."
Josh Neff
Sophomore
RTIS

"Golf"
Andrion Becker
Sophomore
Production Animation

"Midget Mud-Wrestling"
Jaime Moravetz
Sophomore
Production Animation

"Anything poker related"
Pat Jandro
Sophomore
Production Animation