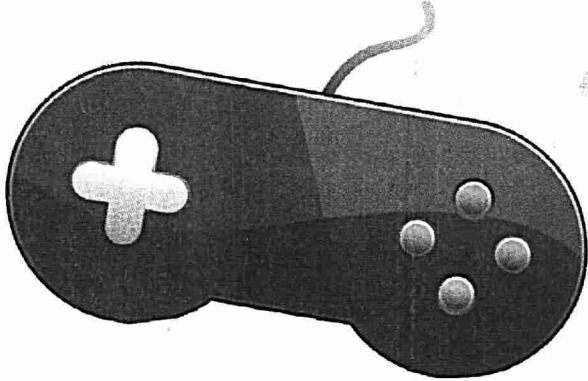


# Game Play for Pay: *Computer Game Design & Development Creates Job Opportunities*



by **MEG BARONE**

**T**here are those people who think that playing video games is a colossal waste of precious time and brain cells.

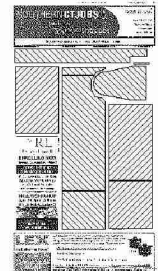
Well, it's the gamers' turn to answer back with proof that their lengthy time in front of computer and television screens is not just a worthless or geeky hobby but a potential career opportunity, and a lucrative one at that. With all those wrist maneuvers and finger thrashing they are actually honing their skills for an Information Technology career in video game design and development without even realizing it, and it's a career that can pay a substantial salary, according to industry insiders.

Computer game design and development is recognized as a viable career option by a growing number of colleges and universities including Sacred Heart University in Fairfield. SHU launched its Game Design and Development degree program to its undergraduate lineup in the Fall semester of 2009 using as a catch phrase, "You know how to make gaming fun. Why not make it a career?"

"There is going to be an increasing need. Video games are increasingly becoming a part of our lives. I'm not talking about the shoot-'em-up games. That's part of it. But a lot of companies are developing mind games, brain games, stimulating word games. It's amazing to see what people come up with. They are vibrant games but they don't involve a lot of action," said Professor Domenick J. Pinto, M.S., chairman of the Computer Science and Information Technology program and Graduate Program Director at Sacred Heart University.

In some cases, the games being developed become simulators, for example, providing a way of learning and practicing a new medical technique or procedure. The defense industry uses game simulation to teach battlefield strategies and improve shooting skills.

"There are practical aspects of it so it's not just entertainment, although that's certainly a big part of it," Pinto said. "All evidence points to the fact that the career opportunities are going to increase more and more, especially with all the social networking out there," Pinto



said. He mentioned Facebook as one of the networks that provide games to play.

Additionally, he said, people can either play some of these games on their own or they can participate in virtual games with other players, and those players can be anywhere in the world, all linked by technology. And it's not just games. There are plenty of online tournaments, he said.

"And it's not only 20 year olds playing," Pinto said.

Few places offer degree programs that provide the skill set for gaming design, according to Pinto. But SHU officials noticed the surge in interactive computer games for both learning and entertainment and recognized the need for developers because the industry is experiencing a severe shortage of game programmers.

The job demand is high, especially in New York City, Pinto said. This is a valid career choice, he said.

So successful is SHU's new Game Design and Development track that in less than a year's time it has garnered favorable reviews from the press including a prestigious college ranking publication, and SHU officials have seen fit to expand the program. The Princeton Review, in a partnership with GamePro magazine, has recognized SHU's game design program as one of the best in the United States and Canada, placing it on its Top 50 Undergraduate Game Design Programs list. GamePro is one of the most respected brands in the video game industry, reaching over 3 million gamers a month.

The Princeton Review looked at data on scholarships, financial aid and career opportunities. Criteria also included the quality of the curriculum, faculty and faculty credentials, facilities and infrastructure.

"It's amazingly prestigious. It was an honor," said Pinto, pointing out that The Princeton Review interviewed 500 schools with game design programs, placing Sacred Heart's in the top 10 percent in North America, and in its inaugural year no less. "We were in our first semester of offering our first gaming track. We had no students who had done internships or gotten jobs," he said.

In the Fall 2010 semester, SHU will introduce the program on the graduate level with a certificate program, adding to Computer Science Department's significant list of certificate programs in multi media, web design, network security and six other disciplines. Then in the 2011-2012 academic year the University will add a Master's degree programs in Game Design and Development.

"Our curriculum is an ever-evolving, dynamic phenomenon that we strive to be reflective of the needs of the workplace," Pinto says on the SHU website.

The Game Design and Development Track is designed to provide individuals with skills in game design, development, storyboarding, animation, creation of objects, programming languages and action scripting. The courses in the gaming track provide an overview of the game creation process and a strong foundation in computer graphics, and allow the students to work individually and collaboratively in the development of games.

The current undergraduate degree program requires students

to take five specific gaming courses – Introduction to Computer Gaming; Advanced Computer Gaming; Introduction Computer Graphics; Advanced Computer Graphics, focusing on advanced graphics techniques using OpenGL and/or DirectX; and Fundamentals of Game Design, exploring how logic and creativity work together in the well designed computer game.

Students in this degree program will not be limiting themselves to careers in the computer and video game design and development profession, Pinto said. “We are embedding the gaming track in our already existing Computer Science track,” he said, which provides them with endless professional possibilities in the computer science and information technology fields.

“The students are not just taking courses in game design and development but in various areas. The students will be prepared for a number of different careers,” Pinto said, adding that Game Design and Development majors are also required to take supporting courses for the Computer Science concentration, and students who complete the program will be awarded a Bachelor of Science degree in Computer Science.

Pinto said the Game Design and Development degree program looks at the engine behind the games and their graphics. “We’re not drawing pictures. That’s what the artists do,” he said. “It’s the strategy behind the game. Every game has a strategy, a way of accumulating points. A lot of that is related to the programming and the software behind the game,” Pinto said. “Gaming involves more than just putting together animated figures. It involves planning the game and how it will work and maintain statistics for it,” he said. It involves coming up with a game’s mission and the challenges that will make it interesting and desirable to play.

That means students need a strong background in mathematics and programming, which they get at Sacred Heart, he said. Supporting courses include Pre-calculus and Calculus, Introduction to Structured Programming, Software Engineering, Computer Organization, Operating Systems, Computer Ethics, Algorithms, Visual Organization, Photoshop and Illustrator, and other courses.

“So, we’re preparing them to be more than a gamer. They have a career path. The students in the gaming track are getting networking, data base and software engineering skills,” he said.

In other words, if they decide to pursue another line of work besides game design and development, their course work at SHU will leave them well prepared to step into other career options within computer science and IT.

“Information Technology in both of our Bachelor’s and Master’s really prepares students for the job market because they get a good breadth of different types of courses from data base courses to networking courses to network security to program and software development, which is basically where most of the jobs are. Most of the jobs in the industry now that we get calls for deal with networking or network security or data base administration or software engineering,” Pinto said.

According to the U.S. Bureau of Labor Statistics, employment in Computer Science and Information Technology is projected to grow much faster than the average for all occupations and is expected to add close to 300,000 new jobs in the decade between 2008 and 2018. “Excellent job prospects are expected ... Overall employment of computer network, systems, and

database administrators is projected to increase by 30 percent from 2008 to 2018, much faster than the average for all occupations ... Growth, however, will vary by specialty," the BLS website states.

Regarding game design and development, the BLS website linked to another employment site that said projected growth in that field through 2018 is expected to grow about seven to 13 percent, and it projected there would be about 72,600 job openings in gaming in that same time frame. The website also noted that the median wages for game design and development in 2008 was \$36.13 hourly, \$75,150 annual.

Pinto said those prospective Sacred Heart University students who are interested in the study of game design and development should apply to the University in general mentioning their intention to study Computer Science and Information Technology program and once accepted should indicate a preference for computer gaming. Graduate level students can apply directly to the certificate program, or they may take the certificate courses, using them as electives as part of their regular course load.

For more information about the curriculum, application process or degree and certificate programs, call Sacred Heart University's Computer Science and Information Technology Department at 203-371-7799 or visit the University's website at [www.sacredheart.edu](http://www.sacredheart.edu).