With the help of their advisor, Dr. Michael Aristidou, DigiPen students Robert Casey and Michael Hensler published an academic paper in a recent journal. Titled “Fuzzy Steering for Autonomous MCU-based Mobile Robotics,” the paper appeared in the November 2006 edition of the WSEAS Transactions on Systems and Control, an international, peer-reviewed journal. The paper discusses the successful application of fuzzy sets to an autonomous vehicle’s steering module and how this results in an improvement in the vehicle’s navigational capabilities.

This project originally stemmed from unsolved problems the students encountered in Dr. Charles Duba’s CS 105 course in which students programmed robotic cars and trucks to navigate autonomously. In Dr. Aristidou’s summer course MAT 362, Fuzzy Sets and Logic, Casey and Hensler applied a subsection of a new branch of mathematics – fuzzy sets – to solve some specific engineering problems that they encountered in the previous course. Under the advice and encouragement of their advisor, Casey and Hensler presented their work at a conference in Venice, Italy prior to publication. The two students enjoyed the conference and beautiful Venice. Casey called it “a valuable experience, which gave us even more hope about the future and what can be done.”

In addition to feeling honored by the publication of their paper, Casey and Hensler found the conference and publication experiences illuminating. “It’s a way to become more aware of what’s going on in the ‘real’ world and to be introduced to other professionals who are also making academic contributions to the fields we study in our classes,” Casey felt. They also learned that writing an academic paper requires a certain amount of discipline and attention to detail with words and mathematical expressions. They recommend that other students seriously consider similar opportunities.

Dr. Aristidou found the experience to be inspiring. The success of these two students motivated him to found the Undergraduate Research Group at DigiPen. The purpose of this new group is to seek student work for serious projects and interdisciplinary collaborations, to organize talks, and to look for funds to finance student research and conference opportunities. “I feel that Casey and Hensler’s success set a precedent here at DigiPen that help established policies for future student research and support for similar projects,” Dr. Aristidou stated. He also noted that two more papers that have come out of math courses will be presented at a math conference in Oregon this April. Additionally, another paper from MAT 362 is being sent to a serious game journal. As this experience demonstrates, DigiPen students do credible research that is recognized internationally. Congratulations to all involved!
Successful Career Day

DigiPen's President, Claude Comair, confers with several seniors about their projects that they have put on display for Career Day. >

DigiPen's Fourth Annual Career Day was a great success. Over 50 representatives from 23 companies from around the U.S. had the opportunity to interact with our graduating students from all our programs. At Career Day, company representatives reviewed student portfolios, and all were given the opportunity to make short presentations about their companies and the available job opportunities. Seven companies also took advantage of their time on campus to conduct student interviews. They interviewed 43 students on site, some of whom they invited back for second interviews in the following weeks.

Career Day is a culmination of everything that we do at DigiPen, and everyone on campus played a role in preparing the students and the facilities for this event. The Student Services team would specifically like to thank everyone who helped, including the game department, art department, IT, facilities, and production. Karen Wheeler and Lindsay Jones coordinated the entire event, while Jen Sward organized the portfolio review. Some of the companies that attended this year's event included Activision Inc., Cingular Wireless, Disney Online, Gas Powered Games, Microsoft Games Studio, Monolith, Nintendo Software Technology, Sierra Online, Sony Online, THQ, Wizards of the Coast, and Zombie.

Xin Li
Computer Science Department

Dr. Xin Li, the Chair of the Computer Science Department and Director of the Graduate Program, began working at DigiPen in spring 2000 as a part-time instructor. Prior to coming to DigiPen, he worked for Nintendo Software Technology and made games on the Nintendo-64 and GameCube platforms. He also spent seven years at Lockheed Martin as a senior software engineer, writing flight and ground vehicle simulator software. Dr. Li holds a Ph.D. in Computer Science from the University of Central Florida, where he specialized in three-dimensional graphics modeling and rendering.

His solid industry background has served him well in the many Computer Science courses he has taught. Although he has taught around a dozen different courses at DigiPen, now he focuses on teaching graduate courses and undergraduate senior electives. When asked what his teaching philosophy is, Dr. Li responded with a Chinese proverb: “Give a man a fish, and you feed him for a day. Teach a man to fish, and you feed him for a lifetime.” He especially enjoys working with the “many brilliant and hard-working” graduate students at DigiPen, since he expects their work to make many important contributions to the thriving technological advances in video game and real-time simulation software.

Dr. Li also has an extensive track record of academic research and publication. He has co-authored seven U.S. patents. In addition to publishing his Ph.D. research project in the ACM SIGGRAPH (1993), he has published more than 40 technical papers in different journals and conference proceedings. When he is not teaching, writing up another report on his latest research, or administering the graduate program, Dr. Li enjoys many outdoor activities, including skiing with his children and playing tennis with his wife. Dr. Li has made many important contributions to DigiPen, the video game industry, and the computer science field.
Testing the Myth of the Lazy Gamer

Maria Hong’s composition course focuses on developing college-level writing skills in DigiPen students. They learn how to analyze and write essays in different modes, such as description, comparison and contrast, and process analysis. These skills serve them well in the industry when they need to communicate their ideas to others.

For one assignment, Professor Hong asked her students to write an exemplification essay beginning with a generalization that others have made about themselves. They then had to agree or disagree with the generalization and marshal different kinds of evidence to support their theses. Many students wrote fine essays on topics ranging from being perceived as a nerd to being the victim of a vampire. Written by Mike Bauer, a first-year student, the essay below addresses a generalization with which many gamers are familiar.

“Debunking the Myth of the Lazy Gamer”

Girls can’t drive! Boys are violent! People are stupid! Generalizations have been made since the dawn of time. They are responsible for great tragedies and countless sitcoms. In today’s society, there are still generalizations—people just use different words such as, “demographic,” “typecast,” and “stereotype.” In my life, people make generalizations about me. When they find out I am Christian, they automatically think I am Republican. People think I am a punk, because I have my ears pierced. There is one generalization that bothers me every time I hear it: I play video games so I must be lazy. However, this isn’t true.

People generally think of the gamer community as lazy and self-absorbed. For this essay, we will define lazy as “not putting forth effort unless it helps one’s self.” I can cite several locations where gamers unite to achieve a goal for the community. A local Website called Penny Arcade hosts an annual event called Child’s Play, in which a large group of gamers orchestrate auctions, charity events, and online wish lists to provide electronic entertainment to children’s hospitals around the world. It takes several months of planning and doing to achieve this goal. It is an event where the gamer community proves its commitment by providing over $600,000 to sick kids across the planet.

My denouncement will now progress in a hypothetical direction. Look at the differences between some working worlds. You have Joe, a middle manager for an accountant firm. He works from 9:00 AM to 5:00 PM. He goes home, fixes dinner, watches TV, reads a book, and then goes to bed. This is a regular day in the life of Joe Schmoe. Now meet Max Power. Max is a video game programmer. He spends 10 hours at work coding a game that has to be delivered. When the due date approaches, it isn’t uncommon for Max to spend 12 to 14 hours at work. He does this six days a week. Now, Joe Schmoe isn’t being idle, but if one considers Joe to be productive, then how can one think Max is lazy?

In my life, I receive weird looks every time I tell people I am going to a college that teaches me to make video games. People immediately think that the school is easy and a waste of money. This is apparent before the words even leave my lips.

When I was accepted to DigiPen, the first thing I needed to do was to secure funds. Even though I was going to school full-time, I was also working full-time, which allowed me to save up a great deal, but I needed more money. My mom doesn’t have much, but she was going to help me as much as possible. My only challenge was my father. At first he said no.

I spent weeks trying to convince him that this was what I wanted to do. In his mind, a school based around video game production meant it was for kids, and it would never get me anywhere. He also thought it would be an easy workload, and I wouldn’t do anything but play games. When he found out that the credits required to get a degree here are significantly more than a traditional university’s, he began to change his mind. In the end, I had to drag him up to DigiPen and take him though the school tour. When he saw the success of the students, the challenge of the program, and the location of the school, he was finally convinced that DigiPen was a legitimate college. He told me he would help pay for my schooling, as long as I kept up my GPA.

DigiPen Partners with National Non-Profit

In partnership with the non-profit organization Learning for Life, DigiPen hosted the Learning for Life Explorer Post “Introduction to Video Game Development Workshop” this January. Learning for Life supports schools and community-based organizations in their efforts to prepare youth to handle the complexities of contemporary society and to enhance their self-confidence, motivation, and self-esteem. About 45 students from various high schools in Washington State attended the workshops. There were four consecutive sessions, each held on a Saturday from 10 AM to 1 PM. RTIS sophomores Mike Anderson and Matt Hill instructed the participants over the course of the four sessions.

The first session introduced the topic of the Explorer Post. The instructors talked about the industry and what one needs to do to make a video game from start to finish. They also discussed the courses that interested students need to take in order to prepare for the industry.

The second session focused on basic programming concepts and understanding the main structure of a video game. During this session, participants used ProjectFUN to work on components of a real video game. The third session covered art, including interface design, characters design, and animation. Participants used Microsoft Paint to create art assets and make maps. The fourth and final session introduced game design and explored how technology impacts design. Using ProjectFUN, participants worked on their own game projects. They even got to test student projects from Christopher Erhardt’s game class. It was a very successful series of workshops, and many students attended each week.
On February 8, Dr. Sing Bing Kang of Microsoft Research spoke to students and faculty at DigiPen. Titled “Vision for Graphics,” his talk focused on how images and videos can be used to produce a variety of photorealistic effects. He discussed higher dynamic range video, realistic-looking interpolated views of dynamic scenes, three-dimensional models of plans, and rain. He also described how flash/no-flash image pairs can be used easily to produce mattes of foreground objects and how photos of animations can be analyzed to facilitate animation. One of the techniques he discussed, for example, was sampling the real world to generate photorealistic content.

As a senior researcher at Microsoft working on image-based modeling and image and video enhancement, Dr. Kang was an ideal speaker on this topic. He received his doctorate in robotics from Carnegie Mellon University, Pittsburgh, in 1994. Additionally, he has co-edited two books on computer vision, Panoramic Vision (2001) and Emerging Topics in Computer Vision (2004), and co-authored Image-Based Rendering (2006). He also has chaired and has served on several professional committees, including the 2007 SIGGRAPH program committee.

Dr. Kang’s talk was part of the computer science colloquium series organized by Dr. Rania Hussein. This series, along with the math colloquium series organized by Dr. Michael Aristidou, is part of an effort to promote research at DigiPen and to give students opportunities to relate what they learn in the classroom to real-world applications. For example, some of the techniques used in the applications that Dr. Kang presented are covered in the computer classroom to real-world applications. For example, some of the techniques used in the applications that Dr. Kang presented are covered in the computer graphics for interactive games and simulations. Talks like this will continue to expose DigiPen students to active areas of research.

Will Hayward has followed a unique path that has brought him to where he is today – a junior in DigiPen’s RTIS program. It started over two decades ago with his first computer in Rochester, NY. Will reminisces, “Back around 1980, I got my first computer – the Radio Shack TRS-80 Model 1. It had 4 KB (yes, kilobytes) of memory, which we later upgraded to 16 KB. Programs were loaded from and saved to cassette tape, and the monitor was black and white.” He remembers learning how to use conditional statements and loops, basic concepts that DigiPen students use today, just to get it to work. Will even used this state-of-the-art machine to create his own computer game, a knock-off of the Car Wars paper game. Empowered by the hopefulness of youth, he wrote Steve Jackson Games to see if they would publish it. “Thankfully, they turned me down. It was awful code,” Will admits.

The next turn in his path found him at the Rochester Institute of Technology (RIT), where he spent two years in the Computer Engineering program. During his second year, he started an exciting co-op job with the RIT Research Corporation. Working on a government-sponsored contract, he traveled to Washington, D.C. several times to write technical reviews about hardware and software. This part-time internship lured him away from the halls of academia and into a full-time job in the IT industry. “I definitely have some regrets about not finishing the last two years. I let go of something I had started for something that was more ‘fun,’” Will confesses. “It’s a tougher road to go down in the technical industry without a Bachelor’s degree. And it’s a lot harder to go back 10 years later.”

His path finally brought him to DigiPen. When Lycos laid Will off during their workforce reduction program of 2003, he knew that he was ready for something more creative. Like many others, Will first heard about DigiPen in a gaming magazine. After months of researching colleges and various online programs, DigiPen, with its fully packed, four-year program of 2003, he knew that he was definitely lucky to have an opportunity to follow his dreams.

Will is enjoying his DigiPen experience, especially the challenges of the Projects classes. “The great thing is that there are so many of them!” he says. “I’ve had semesters at DigiPen where I’ve done more projects than in my entire two years at RIT. We are definitely lucky to have an opportunity like this.” He enjoys working as part of a team of people who share similar ambitions and who are guided by the ability to create. “I think programmers and artists need to have in their job that sense of creation in order to be happy,” Will feels.

Will’s efforts and talents have not gone unnoticed. Recently, he received word that the International Game Developers Association (IGDA) has awarded him a GDC Student Scholarship to attend the upcoming game developers’ conference. Even though he has been to other conferences before, he is looking forward to this one more than the others. As part of the conference scholarship award, he will be paired with Wolfgang Engel of Rockstar Games, San Diego. Engel is a senior graphics programmer and author of several books. Will plans on using this experience to network with other game programmers.

Others also have joined Will on his path from the days of writing code on a TRS-80 to rubbing shoulders with game programmers. He and his wife have two children, a seven-year-old daughter and nine-year-old son. “I’ve always been determined not to miss out on their growing up, no matter how busy I think I am,” he declares. In addition to reading Harry Potter books with his children, Will enjoys playing computer games with them. “Can you say ‘Family Battlefield’?” he asks. “It’s great to grow your own LAN gamer buddies – I highly recommend it someday.” Recently, he and his family went hiking around Mt. Rainier, something that Will advises everyone in the Seattle area to do.

His path has also taken him to interesting places in the world. Will has been to the four corners of the U.S. and to foreign countries like Bermuda, Italy, and China. He enjoys traveling because he gets to experience something new. “You’ll soon realize that for every place you go, you’ll have a new story to tell,” he says. “And I still feel like I’ve just begun.”