T"he Center of Excellence in Enterprise Technology (CEET) has been awarded a $260,000 grant from the National Science Foundation to develop accessible, scalable systems for robotic simulation across the national computer science curriculum. Over the next years, Dr. Frank Klassner, principal investigator, will work with NASA's Jet Propulsion Labs (JPL) to extend their ROAMS simulation system to create the Robotic Analysis and Modeling Simulator (RAMS) for teaching robotics. ROAMS is the system used by NASA to design and simulate major robotic missions such as the Mars Rovers. The grant represents one of the rare opportunities Villanova faculty and students have had to participate in a lead role in working with NASA researchers on a nation-wide curriculum effort. It is also the largest funded collaboration between Villanova and JPL to date.

The RAMS research project will investigate how to design interfaces that can be scaled by instructors to offer students simulation details appropriate to the course at hand. RAMS is using a platform-neutral approach to model robots to help educators more easily exploit commonalities among the many educational robotics platforms in use today. The project's simulator has broader impact in making computer science education's "robotics revolution" more accessible at colleges with little hardware engineering support to help students develop skills at designing software for robots. The RAMS system will also be evaluated as a basis for Internet resources to allow schools with limited resources to participate in national or regional robotics competitions through realistic networked simulations. Graduate Student AJ Palkovic (BS '10 MS '11) and undergraduate student Taylor Clifton ('13) will be the first research assistants on the project.

Founded in 2004, CEET is an interdisciplinary research center with core faculty from Computing Sciences that addresses software challenges of scale. CEET works to bring together experts from suitable backgrounds across Villanova to explore scalability issues in the corporate, scientific, and educational arenas. Since its formation, CEET has received over 6.5 million dollars in external funding from sources such as the US Air Force, the US Army, the National Science Foundation, and local corporations.

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**GRACE HOPPER WOMEN IN COMPUTING SCIENCES CONFERENCE**

This year's Grace Hopper conference was held in Atlanta, Georgia. Over 2000 female students, teachers, and women in the professional work force came together to network, learn, and celebrate accomplishments. From the time they arrived in Atlanta on Tuesday September 28th until they left on October 2nd, graduate student, Kristin Raudonis, and undergrads, Jenny Liang, Kristin Arcurio, Jill Kramer, and Kristin Palazzolo had the opportunity to meet with inspiring women in the computer field from around the world, Dr. Mirela Damian and Dr. Robert Beck also attended the conference with the students.

Each day of the conference there were various lectures and workshops that anyone could attend. Attendees received recommendations for the workshops and lectures that were most suited to their interests. They were all organized into separate ‘tracks’ that were organized to be followed by certain groups of attendees whom might benefit most from the presentations. For example, the undergraduate student track included lectures on research, “Things I wish I knew before I started my career”, communication skills, how to use Facebook and other social media tools.

Numerous companies attended the conference e.g. Google, Microsoft, IBM, Lockheed Martin, and Facebook. Each company had its own table with representatives taking resumes and providing useful information about jobs and internships. Direct meetings with the representatives proved to be beneficial to the students. Kristin Raudonis, a 5-year graduate student, had several interviews.
The ACM International Collegiate Programming Contest (ICPC) is a multtier, team-based, programming competition. The contest's challenge to solve 8 problems in 5 hours fosters creativity, teamwork, and innovation in programming, and tests students' ability to perform under pressure. It is the oldest, largest, and most prestigious programming contest in the world. At this year's Mid-Atlantic Regional competition on November 9, 2010, the Computing Sciences Department's teams gave us plenty to be proud of. The senior team, "We'll Do It Live," named after Bill O'Reilly's infamous flip-out on "Insider" television, placed 15th out of 158 teams in the Mid-Atlantic region of the international competition. The junior team, "Assert(thecake)," named after an Internet meme reference to the missing reward in a video game, solved 1 problem to place 15th at Wilkes University.

Ira Blossom II is a sophomore Computer Science Major at Villanova University. He has a strong interest in web development, human computer interaction, and user experience/interface design. Ira had his first encounter with web design in high school when his father, a pastor, enlisted his help to create a website for his church. Over the summer of 2010, he created LoudMouthU.com, a University review site partly to find answers to the way students think and use the web.

Ira also wanted to give students another source for professor evaluations. (NovaTeachers, another popular evaluation resource, does not allow new users to register, and only current students with old usernames and passwords can view the content). From there, Blossom's fascination with web design grew into a hobby, and then a major in human computer interaction.

Unlike NovaTeachers, LoudMouthU offers opportunities to review events around campus, entertainment, clubs and organizations and restaurants. While LoudMouthU is specifically designed for Villanova students, Ira left room for expansion across college campuses. When Ira created the first prototype of LoudMouthU.com in early June he had to figure out the submission process, design the layout and determine how users were going to interact. He used a Content Management System called Word Press, which allowed him to build and add new features to the website, such as allowing all e-mail addresses to register. He also added extensive security software to fix errors that typically checks the database. During my tenure here, I've become a "SME" (subject matter expert) on a set of tables that feeds 3-4 downstream applications and represents benefit information to members and providers. In the future, I'd like to be a technical delivery manager.

I love creating designs for problems that a business has identified. At one point, it was necessary for a whole team to load flat files to a database manually; it would take them days. I went into the situation and wrote a bunch of KornShell scripts to data-cleanup the files and then mass-upload them into the database. When I was finished, my process took 15 minutes to run, compared to the days it used to take. Besides the gained efficiency, a major value added was a dynamic report showing offending records and their issues. Previously, we would need to guess what the issues could be; my scripts show exactly what needs to be fixed. The Computer Science curriculum at Villanova helped lay the groundwork for most of the analytical problem solving skills that I use on a daily basis and for my reputation for streamlining operations.

After the Job Search, Before the Mortgage

As you've read elsewhere in this issue of our department Newsletter, a career in computing remains healthy, even in today's economy. This column regularly shines the spotlight on one of our illustrious alumni. This time we report on Minh Kinh Tran (BSCS, 2009), who writes:

I'm currently working in the Washington, DC, office of Carefirst BCBS. After being blessed by several promotions, I'm now working as an application integration technician. This job includes ongoing communication with businesses to define requirements, develop code, profile data, and help coordinate contractors to fulfill their needs.

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Computing Sciences Newsletter

Trophy Case Needed

Minh Kinh Tran (’09)

loudmouthu.com: The New Talk of the Town


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MESSAGE FROM THE CHAIR

Computer science is national and international. Our students and the faculty are in the midst of activities with broad reach and in diverse locations. For example, Dr. Giorgi Japaridze has been appointed a distinguished visiting professor at Shandong University, the second-oldest university of China. He will spend a total of three months each year at the University lecturing and working with a research group in logic. Dr. Lillian (Boots) Cassel has been appointed guest scholar and lecturer in a distributed masters program in digital libraries. She gave a series of lectures in Parma, Italy at the end of October. Dr. Anany Levitin gave several lectures this summer at the Young Russian Researchers Summer School. Connections such as these lead to exciting opportunities for our students. You have read about some of them elsewhere in the newsletter. Of particular note are Carmen Nigro and Kristin Raudonis who have had papers accepted at significant research conferences. Also, Taylor Clifton spent the summer at JPL in Pasadena and Casey Burkhardt had an internship with Google in Mountain View. We look forward to extending these opportunities to the Class of 2014, whose members are already making substantial contributions to our research groups. Billy Alfano has brought his Flash programming skills to the virtual reality group and Kristin Palazzolo is investigating ebook readers from a number of viewpoints.

In the spring we will be working to place our students into excellent graduate schools, exciting positions in industry and challenging internships and research experiences. Because of the successes of our alumni and the attention to excellence in our programs, this task is not difficult. For the alumni, let us know about your successes and watch for the alumni survey coming very soon. Finally, thanks to all the alumni who have earmarked their contributions to Villanova for the use of the Department. We will use your money wisely in support of student research.

BITS & BYTES

Dr. Goelman was the recipient of an NSF grant entitled “Databases for Many Majors: A Student-Centered Approach.” His co-PI on the grant, which totals $79,432 and covers the period from March 2010 to February 2012, is Dr. Suzanne Dietrich of Arizona State University. The research introduces students of various majors to database technology. It parameterizes the approach to specific majors and includes extensible FLASH animations. Dr. Frank Klassner served on the Centennial 2010 Boy Scout National Jamboree webmaster committee, July 24 - August 5. The Jamboree hosted 45,000 youth and 8,000 adults from around the US and the world, and its Web site http://www.bsajamboree.org featured 3D immersive video work by Dr. Klassner.

The annual conference on Innovation and Technology in Computer Science Education took place at Bilkent University in Ankara, Turkey, from June 26 to June 30 this year. Villanova Computing Sciences faculty were again present and active; both Dr. Cassel and Dr. Goelman chaired sessions there. Dr. Cassel’s was entitled “Theoretical Overtures”; Dr. Goelman’s was “Course Design.”

The 26th Annual CCSC Eastern Conference took place at Juniata College, in Huntingdon, PA, on October 15-16, 2010. Last year’s outstanding meeting was hosted by our own department at Villanova, of course. This year’s participation by Villanovans included paper reviewing by Profs. Goelman and Joyce. Dr. Goelman also made two presentations, “Databases as an Outreach Topic to Non-Majors,” and “An Animation for Motivating the Study of Relational Databases.” Both papers are related to his current NSF research grant.

Villanova CSC alumnus Peter DePasquale served again as Papers Chair, and mathematics alumna M.E. Jones presented a faculty poster.

Prof. Helwig attended a two-day Media Computation Workshop at the College of New Jersey in July run by Mark Guzdial, a professor at Georgia Tech, and hosted by CSC alumnus Peter DePasquale. The workshop focused on Mark’s media computational approach to introductory computing classes where the focus is on manipulating pictures, sounds, and video using Python and Java.
In spite of the widely believed and thoroughly debunked urban legend that former Vice-President Al Gore “invented the Internet,” our science of computing is what it is due to him. Internet pioneers Vint Cerf and Bob Kahn credit Congressman Al Gore as being the first elected official to grasp the potential for high-speed, widespread, networked computer communication as far back as the 1970s. It was Al Gore’s advocacy for this visionary idea that led to the funding for ARPANET, the forerunner of the Internet. Try to imagine computer science without the Internet.

This semester, computer science students are involved in a topic that again owes much of its popularity to Al Gore. In a new course, “Computing and the Environment,” students are exploring the interplay of computers and computer science with the earth. This is a subject that is in the public consciousness largely due to Mr. Gore’s advocacy in the film, “An Inconvenient Truth”, for increased human stewardship of our environment.

Students are exploring Green Computing topics as varied as recycling of old computers in developing countries, to techniques for reducing power consumption and thereby saving money. The underlying theme is that computers and computer science are inextricably interwoven into the fabric of daily life. Whether it is software that models environmental change, tracks weather patterns, communicates information, designs animation, controls energy generation plants, or monitors and manages efficient energy use in homes and offices, computers and the environment are indivisible.

Meanwhile, meaningful debate of human impact on the environment and what to do about it is often overshadowed by the shrill voices at the extremes of the debate. Students this semester have observed this first-hand, noting that both “An Inconvenient Truth” and alternative films such as “The Great Global Warming Swindle” sometimes present opinion as fact, or make crucial arguments without documented proof. Whether this is a necessary conceit of filmmaking, or a clever debater’s parry, ultimately it is unsatisfying.

Computer science, along with the other sciences, trains us to keep an open mind, to accept that we don’t yet know what we don’t yet know, and to follow the facts where they lead as we attempt to solve problems. To that end, a new film “Cool It” (coolit-themovie.com) strives for a more pragmatic presentation of modern environmental concerns. It may be worth a look. No doubt, the Internet doesn’t resemble what Al Gore imagined when he “invented” it. It is likely that the Global Warming debate, of which computing plays an integral part, will not resemble what he envisioned. Either way, it is hard not to want to thank Al Gore for keeping computer scientists well supplied with challenging problems and the technology to tackle them.