

College of Computing Sciences NEWSLETTER

New Jersey Institute of Technology, Newark, NJ

Summer 2008



Computing Goes Into the Closet

A message from the Dean

Computing is a rapidly changing discipline, finding new kinds of application to new areas, even while its use in traditional areas is intensifying. The increasing role of computing in our lives is being driven by competition and by the gains in productivity that intensive deployment of computing yields. Computing is permeating the fabric of our society. This means that we, at work, at home, and at play, need to be increasingly computer savvy. Importantly, computing is going "into the closet." That is, most computing now occurs out of sight, not in such identifiable computing devices as laptops and desktops, but embedded in cell phones, iPods, automobiles, microwave ovens, building control systems and a host of other places. We in the College of Computing Sciences are determined that the computing education options we offer will continue to keep pace with the expanding contours of our discipline. Therefore, we have introduced several new computing degrees that reflect the more prominent profile that computing and computing employees hold in business, and the greater demand for business skills and knowledge on the part of computing employees:

- BS / MS in Computing & Business
- BS / MS in Business & Information Systems
- MS in Emergency Management & Business Continuity.

Narain Gehani

PS: Moving with the times, we now offer current and potential students the facility of online chats with advisors.



Scholar-ship (skol-er-ship)

Money or other aid granted to a student, because of merit, need, etc., to pursue studies.

You Can Make a Difference by Funding a Scholarship

You or your company can help young men and women studying at NJIT. Scholarships are one way of doing this.

If you are interested in setting up a scholarship for a deserving CCS student, we would be very pleased to discuss specifics with you.

Please contact Serena Branson at

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Faculty News

New Faculty

Two new faculty members, Zhi Wei and Reza Curtmola, have joined the Computer Science Department as Assistant Professors.

- ◆ Zhi Wei's expertise is in Bioinformatics.

Bioinformatics is the interesection of biology and computing. It enables many experiments to be done using computers without requiring expensive wet labs. Wei received his PhD from the University of Pennsylvania.



- ◆ Reza Curtmola's expertise is in Information Security. Security of data is of the utmost importance. In this high technology age, data is what drives the economy.



Information security studies how to protect data to prevent identity theft, misuse of business data, etc. Curtomola completed his PhD from Johns Hopkins University, followed by a year as a Post-doctoral Fellow at Purdue University.

Bioinformatics and Security are key research and teaching areas.

Fulbright Award

- ◆ Starr Roxanne Hiltz, Distinguished Professor Emerita of the Information Systems Department, has been named a Fulbright-University of Salzburg Distinguished Chair in Communications and Media. Awards in the Distinguished Chairs Program are viewed as among the most prestigious appointments in the Fulbright Scholar Program.



CCS Faculty Talks/Seminars

Professor Ali Mili

Discrete mathematics and Logic Introduction
Tunis University (Tunisia), January 2008

Professor Cristian Borcea

Is Your Car Talking With My Smart Phone? or Distributed Sensing

University of Southern Florida, February 2008

Professor Ali Mili

Extracting Loop Functions by Static Analysis
Tunis University, February 2008

Professor Grace Wang

Dependable Sensor Networks

Stevens Institute of Technology, March 2008

Professor Marvin Nakayama

A Markovian Dependability Model With Cascading Failures

University of Texas at Austin, March 2008

Professor Brook Wu

Biomedical Mining Personalized and Collaborative Knowledge Discovery in PubMed

Rutgers University, April 2008

Professor Usman Roshan

Population Structure Prediction Using Support Vector Machines

Princeton University, April 2008

Professor Cristian Borcea

Middleware Platforms for Mobile Social Computing.

Rutgers University, May 2008

Professor Jason Wang

Detecting RNA Motifs with RADAR

Princeton University, June 2008

Reaccreditation of Undergraduate Programs in CS & IS

Following a rigorous review by the Computing Accreditation Commission (CAC) of ABET, the undergraduate Computer Science and Information Systems programs have been awarded new accreditations. During the 2007-2008 Academic Year, CCS and the CS and IS Departments worked with a review team from CAC, the recognized accreditor for college and university programs in applied science, computing, engineering, and technology. The CAC team was conducting a periodic review of these programs.

The CAC has been tasked by the professional societies in the computing sciences (ACM, IEEE and others) with establishing professional standards for undergraduate degree programs in Computer Science and Information Systems. Universities seeking to have their undergraduate curricula accredited must satisfy a set of rigorous standards. These include documented and measurable curriculum objectives, established internal assessment procedures, a well-qualified, full-time faculty, a state-of-the-art curriculum that satisfies specified curricula objectives, modern and readily available computing facilities (hardware and software), an appropriate level of institutional support and financial resources, and a dedicated infrastructure to support the educational mission.

The CAC team was headed by Dr. Larry Jones (Carnegie Mellon University) and included Dr. Donald H. Cooley (Utah State University) as program evaluator for Computer Science and Dr. Michael Whitman (Kennesaw State Uni-

versity, Georgia) as program evaluator for Information Systems.

A team of College faculty members did much work preparing for the review, including preparing an extensive review and self-study reports for the CAC. The team included Dr. Michael Baltrush, Dr. Barry Cohen, Dr. James McHugh, Dr. George Olsen and Dr. Julian Scher. This team met weekly during the Fall '06 and Spring '07 semesters, gathering the materials and data required for the reaccreditation. They discussed and prepared responses to the various questions asked by ABET. Approximately 1,000 pages of documentation were submitted in support of reaccreditation.

After their campus visit, the CAC team raised a number of concerns, which were responded to. Notably, IS restructured and simplified its application environments into just three categories: Business and Management; Legal Arts and Criminal Justice; Graphic Design, Digital Media and Communications.

NJIT's Computer Science (BS and BA) and the Information Systems (BS and BA) programs were among the first accredited programs in the nation, and the first in the state of New Jersey. Accreditation assures our students and alumni and potential employers that the education provided in the computing sciences meets professional standards of rigor.

Accreditation is for a fixed time period, typically six years.

ACM Student Chapter Visits Forbes.com in New York

by **Ken Mosca**

On December 5, 2007, the NJIT ACM Student Chapter visited the New York headquarters of Forbes.com at the invitation of NJIT alumnus Michael Smith. Mr. Smith is Vice President and General Manager of Operations at Forbes.com. Several members of the student chapter went to talk with Mr. Smith and see how the organization handles broadcasting hours of online content every day.

Forbes.com is an extension of the Forbes operation and has become the world's most widely visited business news site. They broadcast hours of online content every day and their viewership rivals or exceeds most cable financial news sources. The student chapter was treated to a tour of the operation as well as the chance to see the studio where a lot of the filming takes place. One of the students was even allowed to be filmed reading a piece of news to be broadcast later that day.

Mr. Smith spoke to the chapter about the importance of

being adaptable in a business environment. Also, there was a very interesting conversation about the role of experience in a working environment versus the academic environment. The discussion covered a wide variety of topics about the Internet and its developing environment; how so many changes have occurred that would not have been predicted in the past. The students learned a lot from the trip and were appreciative of being able to see how such a successful Internet business is run.

The ACM chapter of NJIT was founded in January 2007 to serve as a student activity center for those interested in computing and its many applications. The chapter runs visits to different organizations and also hosts presentations on the NJIT campus. The current faculty advisor is Professor Vincent Oria.

Note: Professor Marvin Nakayama shepherded the ACM Student Chapter through startup and its first year of operation as the faculty advisor.

Student Scholarships / Awards

Gary Thomas Doctoral Fellowship

Daniel Boston, a student in the Information Systems Department, has been awarded the first Gary Thomas Doctoral Fellowship.



This award was established by NJIT in honor of Dr. Gary Thomas, who died on January 1, 2008. Dr. Thomas devoted 18 years to NJIT (1980-98). He served as provost and senior VP for academic affairs from 1990 to 1998, VP for research and graduate studies from 1992 to 1998, and VP for academic affairs from 1980 to 1990. Dr. Thomas led in the academic diversification of NJIT, helping to form NJIT's College of Science and Liberal Arts (and serving as its first dean), the School of Management, and the Albert Dorman Honors College. After his service at NJIT, Dr.

Thomas was appointed chancellor of the University of Missouri–Rolla.

At NJIT, he led the development of NJIT's academic and research programs, resulting in significant growth in research expenditures. Dr. Thomas advocated the growth of graduate education programs to support the NJIT faculty's research efforts. The number of PhD awarded doubled during his tenure.

NJIT Highlander Award

Ken Mosca is the recipient of the 2008 NJIT Highlander Student Achievement Award. He was nominated for his outstanding accomplishments, in particular his role as the President of the ACM Student Chapter at NJIT. The Highlander Student Achievement Award recognizes and celebrates outstanding achievements among student leaders, student employees, student groups and student programming.

Prudential Scholarship + Internship

Ramon J. Gonzalez has been selected as the winner of the \$8,000 Prudential Computing Sciences Scholarship. Ramon will also have the opportunity to intern during the summer with Prudential Financial.

Each of the other three finalists, John F. Drangula, Nick Pelletier, and Kenneth Jatzgrau Jr. received a \$250 American

Express Gift card.

As part of the application process, each applicant was asked to write a one-page essay describing himself or herself, college/business experiences, community service or volunteer work and their career goals.

Prudential Scholarship Winner's Essay

My name is Ramon J. Gonzalez and let me tell you a little about myself. Currently I am a junior at NJIT with a cumulative GPA of 3.689. I chose NJIT because here I am able to further my education on a topic that I am very passionate about and still advance my life away from academics.

Currently I am employed by the Borough of East Rutherford, under the Department of Public Works. I am given a wide gamut of different jobs there, from pouring concrete and cutting down trees, to data recovery on town computers. Due to the flexibility of working schedules at the DPW I am able to keep this job year round. How-

ever, during breaks I look for a job more suited to something that I will be doing out of college. For example, the past summer I worked for Lehman Brothers in the Information Technology division. Besides work for my town and Lehman Brothers I have recently decided to form a company with a few others.

When I am not working or studying I like to volunteer to help others. I have been involved with various projects, like the Walk for Cancer with the Phi Eta Sigma Honor Society, and Tunnel to Towers run in New York. Furthermore, I am also a volunteer fire fighter on Truck Company 1 for the East Rutherford Fire Department. Additionally, due

to my technical background, I am also the network administrator. I am also a wrestling coach for the Becton Regional High School, and during the previous year I was one of the coaches for the East Rutherford Senior Wildcats recreational football program.

Moreover, I am proud to say that while being able to accomplish all of this I am still able to continue my social life with my friends and girlfriend.

Finally, I hope that when I graduate I will be able to continue this lifestyle but instead of school have a solid job dealing with network security

Computing Hijinks

NJIT High School Programming Contest

The Computer Science Department of NJIT's College of Computing Sciences hosted its Fifth Annual NJIT Computer Programming Contest for High School Students on April 18, 2008. Forty-five New Jersey high schools teams of up to three juniors each participated. (One team consisting of a single homeschooled student took second place!)



Teams competed to correctly solve a set of problems in the shortest cumulative time. The contestants had two and half hours to solve eight problems.

The winning team solved all eight problems and three teams solved seven of the eight problems. According to contest rules, the tie among these three teams was broken by adding together the number of minutes that elapsed from the start of the contest until submission of each successful solution.

Winning High Schools: #1 Freehold; #2 Home-school@Wayne; #3 Newark Academy; #4 Milburn High School

NJIT Web Design Competition

The Information Systems Department hosted the Third Annual NJIT Web Design Competition for High School Students on March 19, 2008. The Competition introduces high school students to the Information Systems concepts of design and evaluation of web sites. Excitement and innovative design were the order of the day. The event was highly successful and great fun.



Participating were 323 students from 34 schools in the NJ, NY and CT area. Students competed in two categories -- Advance Design and Rapid Design. Students participating in the Advance Design category submitted their designs two weeks before the competition. Students participating in the Rapid Design category created their designs the day of the competition.

Winning High Schools: Advance Design: #1 Mainland Regional; #2 Dover ; #3 Point Pleasant Boro.

Rapid Design: #1 John P. Stevens; #2 Dover; #3 Nutley.

NJIT Game Expo

The Game Expo is NJIT's biannual event showcasing stu-

dents' passion for electronic entertainment. The event gives our students a venue to show off their efforts in the area of game development. We hold a contest that rewards students for their programming and computer arts talents. The event also attracts NJIT students people who are exceptionally skilled in playing competitive games.



The Game Expo held on April 19 was one of the biggest yet. The event ran from 12:00 pm through 10:00 pm and hosted well over 400 people. This Expo featured a new division - the game development contest. Although the game development contests are limited to NJIT students (and HS students), we open up our competitive tournaments to all, with people showing up from Rutgers, Montclair and many people from NY and around NJ.

The next Game Expo will be held on the first weekend in October.

Capstone Showcase

In the Capstone program, students work in small interdisciplinary teams on industry sponsored projects. This semester, in the Eighth Annual Capstone Showcase, 25 teams of CS, IS, IT, Business, and Architecture students presented their projects in a day-long event. These projects were sponsored industry leaders such as Citigroup, Saint Barnabas Health System, IMS Health, Meridian Health, CBS News, and the Star Ledger. The event ended with an award ceremony during which Provost Priscilla Nelson and CCS Dean Narain Gehani gave certificates to winners as judged by a panel of capstone alumni. In addition to the industry sponsored teams, two entrepreneurship teams presented businesses developed by them.



The capstone program has evolved to become a multidimensional program that offers a broad array of real world projects opportunities, a university-wide collaboration and a career path to graduate studies. The Capstone Program has successfully completed more than 400 projects for more than 300 industry sponsors.

Through a lens digitally

(credits: Kelly Cosman & Jay Nair)



Clockwise from upper left: The clock tower: staying in sync; GITC, home of CCS; Campus Green; Campus Center; In class; CCS Cafe—students relax and work on 4th floor of GITC.



Seminars at CCS

- ◆ *Content-based indexing and retrieval in large collections of images and videos.* Valerie Gouet-Brunet, Assistant Professor, Conservatoire National des Arts et Métiers (CNAM), Paris, France. April 16, 2008.
- ◆ *A discussion on networking technology.* Larry Lay, Prudential, April 2, 2008.
- ◆ *Tackling the Content Protection Challenge.* Nelly Fazio, IBM T.J. Watson Research Center, March 26, 2008.
- ◆ *Internet Malware Detection in Enterprise Networks.* Guofei Gu, College of Computing, Georgia Tech March 24, 2008.
- ◆ *Code It Own It '08 Web 2.0 Application Contest* "Liore Alroy Alroy, CEO & Itamar Hassin, CTO, Net2Phone, Inc. March 10, 2008.
- ◆ *Do You Have My Data? Prove It!*, Reza Curtmola, Purdue University, February 27, 2008.
- ◆ *Ontology-based Context-aware Service Discovery in a Globally Distributed Network.* Knarig Arabshian, Columbia University, February 20, 2008.
- ◆ *Anonymous Credentials.* Mira Belenkiy, Brown University, February 18, 2008.
- ◆ *Lightweight and Compromise-Resilient Message Authentication in Sensor Networks.* Grace Wang, Computer Science Department, NJIT, February 11, 2008.
- ◆ *Markov Random Field Models For Network-based Analysis Of Genomic Data.* Zhi Wei, University of Pennsylvania, January 28, 2008.
- ◆ *Don't Call Your Boss An Idiot.* Alan Rosenthal. Chair of the CCS Board of Visitors, January 23, 2008.
- ◆ *Hypothesis Testing with Evolutionary and Systems Biology Models.* Seongho Ryu, New York University, November 26, 2007.
- ◆ *Social Robots.* Reid Simmons, Research Professor, Robotics Institute, Carnegie Mellon University. November 19, 2007"
- ◆ *Technology in the Workplace: Today and Tomorrow.* Barbara G. Koster, Corporate CIO, Prudential Financial, November 14, 2007.
- ◆ *A Hybrid Abbreviation Extraction Technique for Biomedical Literature.* Min Song, Department of Information Systems, NJIT, November 5, 2007.
- ◆ *A Conversation with Dr. Don Sebastian.* Dr. Donald Sebastian, Senior VP for Research and Development, NJIT, October 31, 2007.
- ◆ *The Art of Image Security and Solar Image Processing.* Frank Shih, Professor, Computer Science Department, NJIT, October 24, 2007.
- ◆ *Aligning relationships in the UMLS: Methods and Preliminary Results.* Olivier Bodenreider, Lister Hill National Center, National Library of Medicine, October 23, 2007.
- ◆ *Rethinking Undergraduate Computer Science Education.* Deepak Kumar, Professor of Computer Science, Bryn Mawr College, October 10th, 2007.
- ◆ *CA and CA Labs - Research in the Systems Management Space.* Gabriel Silberman, Senior VP & Head, CA Labs, October 3, 2007.
- ◆ *Web-Scale Information Extraction.* Dr. Alexander Yates, Temple University April 2, 2008.
- ◆ *Guiding Search Using Phases.* Dr. Alan Feuer, Northeastern University, November 12, 2007.

CCS Administration

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