Message from the Chairman

The campus design of a university often reflects the characteristics and spirit of that institution. In the case of IIT, the Mies van der Rohe campus is a perfect materialization of the university’s spirit of innovation. Mies, a great innovator in his field, designed the crystal tower (1921) based on an untried but solid idea—a steel skeleton would be able to free the exterior walls from their load-bearing function, allowing the building to have a glass surface. From a computer science viewpoint, Mies’ innovation is technology-driven and pervasive. Mies’ use of steel and glass was revolutionary. The mass production of steel and glass has made Mies’ design extremely affordable and the choice of the century. Today’s successful information technology innovations are all rooted in technically driven ideas and make pervasive impacts. A good example is Apple’s iPhone. The rapid advancement of microprocessor and wireless communication technology made running apps on small mobile devices feasible. Apple delivered the right product at the right time using these newly emerged technologies. That has forever changed the telecommunication industry.

The spirit of innovation represented by Mies van der Rohe is upheld in the spirit of the Computer Science Department at IIT. In CS we emphasize rigorous training in both theoretical foundations and hands-on experience. At the same time, we give students room to explore and develop other passions and interests. We emphasize technology-driven and problem-solving research. Our distinguished faculty members consist of three ACM and IEEE fellows and three NSF Career award winners, and our strong industrial ties are evidenced by our superior CS advisory board. Our alumni or attendees include Ward Cunningham, the developer of Wikis; Victor Tsao, founder of Linksys; and Abdur Chowdhury, former chief scientist of Twitter, among others. Our graduates are warmly welcomed by employers with a placement rate close to 100 percent. The department received $3,544,978 in non-equipment research grants from the federal government in the 2012-2013 academic year, which exceeds the normal operation expenditure of the department. Together with the department of applied mathematics, the computer science department created the master of data science program in fall 2013, which has been highly publicized by media such as Forbes. The most valuable assets of a university, of course, are its alumni, students, and faculty. The department will hold its 2013 alumni gathering on campus on October 2, 2013, during which we will celebrate Professor Charlie Bauer’s fiftieth anniversary working at IIT, as well as the spirit of innovation. You can find details about the achievements mentioned above and more in this issue of the newsletter.

Xian-He Sun
Chair, Computer Science
Professor of Computer Science
IEEE Fellow

Message from the Dean

The chair’s letter, which follows, has an architectural and design tone. Let me preface his remarks in the same voice. This past summer, I visited Gaudi’s famous—as yet unfinished—La Sagrada Familia in Barcelona. Beyond the stunning architecture and design, I was struck by the extensive use of mathematics in Gaudi’s realization of nature and natural shapes in stone and other materials. He also made extensive use of actual physical models to simulate the forces and loading of the structures he was to construct. Today, we still build models—only in the abstract space of computation and data. We also try to build sense, order and understanding from the myriad data which now exists on all aspects of human existence. To address this, we have emphasized the entirety and importance of this challenge with growing expertise in big data, high performance computing, data science, storage, and security. College-wide, we are also growing our computational and analytical strength. In this way, as I suggested last year, computer science and computation are becoming central to the future of the college.

Russell Betts
Dean, College of Science

In this Issue:

- Appointments
- Grants
- Alumni
- Teaching
- Research
- Awards
- Outreach
- Retired and Remembered
- The CS Department in Numbers

iit.edu/csl/cs
Dennis Roberson Appointed Vice Provost for Research

Roberson, research professor of computer science, was appointed vice provost for research. Roberson is an active researcher and educator in the wireless networking arena.

Dennis Roberson Serving as Acting Chair for the FCC’s Technological Advisory Council

Effective May 2013, Roberson, research professor of computer science and vice provost for research, replaced the former chair, who was recently appointed chairman of the U.S. Federal Communications Commission by President Obama. Roberson also is serving on the FCC’s Open Internet Advisory Committee and the Commerce Spectrum Management Advisory Committee for the U.S. Department of Commerce.

Two Tenure-Track Appointments

The Department of Computer Science is very happy to welcome two new assistant professors of computer science. Aron Culotta, who held an assistant professor position at Northeastern Illinois University, started in fall 2013. Culotta develops machine learning and natural language processing algorithms to discover information from text, focusing on application areas such as public health and disaster response.

Kevin Jin, who recently finished his Ph.D. in computer science at the University of Illinois at Urbana-Champaign, will start in spring 2014. Jin works on cyber security, networking, and modeling and simulation of large-scale computing and communication systems and networks, including the Internet and the Smart Grid.

Shlomo Argamon Appointed Full Professor and Director of the New Data Science Program

Argamon, professor of computer science, has been appointed professor and has been appointed director of the new data science program. He was a Fulbright Postdoctoral Fellow (1994-96) at Bar-Ilan University in Israel and a faculty member at the Jerusalem College of Technology before joining IIT in 2002 as an associate professor.

SilentSense Smart Recognition Software Developed by Cheng Bo Gained Several Media Mentions

Bo, Ph.D. student of computer science in Computer Science Professor Xiang-Yang Li’s group, developed a system dubbed SilentSense that uses a phone’s built-in sensors to record the unique patterns of pressure, touch duration and fingertip size and position of a user interacting with a phone or tablet. These measurements are used to create a unique signature that identifies the user, and anyone whose usage patterns do not match is locked out of the device. The system has been mentioned in articles by UPI, Mashable, New Scientist, Pocket-lint.com, and many other media.
Boris Glavic Receives Unrestricted Gift from Oracle and IIT ERIF Grant for Interdisciplinary Research

Glavic, assistant professor of computer science, has received an unrestricted gift from the Oracle Corporation to support his research on temporal data provenance. He and Eric Houston, assistant professor of psychology, have been awarded a one-year IIT Educational and Research Initiative Fund (ERIF) grant for his research on “An Interdisciplinary Approach for Assessing Treatment Motivation among Patients Undergoing Antiretroviral Therapy, Integrating Multidimensional Scaling with Data Provenance Techniques.”

Renowned Cognitive Scientists Join Metaphor Research Project

Marvin Minsky and Andrew Ortony have joined IIT’s Autonomous Dynamic Analysis of Metaphor and Analogy (ADAMA) Project, led by Shlomo Argamon, professor of computer science. The ADAMA project is developing new methods for understanding metaphors in multiple languages. Minsky, one of the world’s leading cognitive scientists and a founder of the field of artificial intelligence, is professor of media arts and sciences at Massachusetts Institute of Technology. Ortony, a pioneer in metaphor and emotion research, is professor emeritus at Northwestern University.

Dennis Roberson Receives NSF Grant

Roberson, research professor of computer science and vice provost for research, has been awarded a two-year NSF EAGER grant of $175,000 from the National Science Foundation for work on the WiFiUS (Wireless Finland U.S. Program).

Nokia Supports Gady Agam through Collaborative Research Project

Agam, professor of computer science, was supported by Nokia for a seven-month collaborative research project on “Algorithms for Modeling of Buildings from Point Cloud Data.” The project was successfully completed in May 2013.

Xiang-Yang Li Receives NSF Grant

Li, professor of computer science, has been awarded a three-year grant of $498,122 from the National Science Foundation for “Providing Predictable Service and Spectrum Access With Realtime Decision in Cognitive Multihop Wireless Networks.”

Cindy Hood, Xiang-Yang Li, and Dennis Roberson Receive NSF Grant

Hood, Li, and Roberson have been awarded a two-year grant of $512,169 from the National Science Foundation for “Modeling and Analysis of Radar/Communications Spectrum Sharing Opportunities.”

Zhiling Lan Receives NSF and DOE Grants

Lan, associate professor of computer science, has been awarded a three-year grant of $498,377 from the National Science Foundation for “A Cooperative Framework for Topology Awareness on Large-Scale Systems” and a two-year grant of $101,752 from the U.S. Department of Energy for “HPC Analytics for Extreme Scale Computing.”

Xian-He Sun Receives NSF Grant

Sun, professor of computer science and chair of the department, is a co-principal investigator on a three-year grant of $500,000 from the National Science Foundation for “MRI Collaborative: Development of a Data-Intensive Scalable Computing Instrument for High Performance Computing.”

Shlomo Argamon Receives Federal Research Grant, and ADAMA Project Is Renewed

Argamon, professor of computer science, has been awarded a two-year grant of $238,000 for research on determining linguistic and cognitive styles of people by analyzing how they write and what they write about. The Autonomous Dynamic Analysis of Metaphor and Analogy (ADAMA) project led by Argamon has been renewed by the Intelligence Advanced Research Projects Activity (IARPA), administered by the U.S. Army Research Laboratory, for $1,284,336 for a second year.
Sherrie Brown Littlejohn (M.S. CS ’82)

Sherrie Brown Littlejohn, who finished her master’s degree in computer science at IIT in 1982, is an executive vice president at Wells Fargo and heads the Enterprise Architecture and Strategy group with responsibility for architecture governance, enterprise architecture (including payments), technology strategy, system review and the information technology operating model program. Prior to her current role, she was head of Network Services and Operations—a group providing voice, video, wireless, data network and firewall architecture, planning, engineering, telecom expense management, and operational support for network components within Wells Fargo. With nearly 30 years of experience in the telecommunications industry, she has led efforts in voice, data, applications, systems, instrumentation, network and overall IT technology development. She is president of Wells Fargo’s Black/African American Connection (team member network) and is a speaker, host, and moderator for Wells Fargo diversity initiatives.

Littlejohn sits on the IIT Alumni Board and the Board of Advisors, CTO Forum. She is a member of Information Technology Senior Management Forum (ITSMF), CIO Executive Council, and Black Data Processing Associates. In 2011, she was named among the Bay Area’s “Most Influential Women in Business” by the San Francisco Business Times. In 2009, she was recognized as one of the “50 Most Important African-Americans in Technology” by San Francisco-based publisher eAccess Corp. She has been profiled in several national publications including Diversity/Careers in Engineering & Information Technology, Black Enterprise Magazine and African-American Career World. She actively supports her community.

Littlejohn received her B.S. in mathematics from Xavier University of Louisiana. She completed the Executive Business Program, Kellogg School of Management from Northwestern University in Evanston, IL.

Former CS Student Joined Oracle Research

Jin Hui (Ph.D. CS ’12), former Ph.D. student of Xian-He Sun, professor of computer science and chair of the department, has joined Oracle Research in Redwood Shores, Calif.

Former CS Students Appointed Research Assistant Professors at Temple University and University of Toledo

Shaojie Tang (Ph.D. CS ’12) and XiaoHua Xu (Ph.D. CS ’12), former Ph.D. students of Xing-Yang Li, professor of computer science, have graduated from IIT and are currently working as research assistant professors at Temple University and University of Toledo, respectively.

Former CS Student Appointed Faculty Member at the University of Electronic Science and Technology of China

Jingjin Wu (Ph.D. CS ’13), a student under the supervision of Zhiling Lan, associate professor of computer science, successfully defended her Ph.D. thesis on July 10, 2013. She will join the University of Electronic Science and Technology of China as a faculty member.
The Computer Science and Applied Mathematics Departments introduced a new Master of Data Science (MAS-DS) degree in fall 2013. This interdisciplinary professional master's degree program combines high-level mathematics, statistics, and computer science theory with the requisite practical skills needed to collect, prepare, and explore complex data sets, to gather and evaluate insights, to visualize results, and to communicate meaningful findings to diverse audiences.

Students in the program will learn solid theoretical and practical understanding of machine learning; know and apply statistical theory; identify data-related scientific and business problems and processes; and be capable of effective communication with both technical and non-technical collaborators and clients.

The importance of this program is rooted in the global explosion of data-driven decision making. Data of all kinds are being amassed by diverse organizations faster than ever before and are being used to make decisions in business, healthcare, science, and government policy. Yet just collecting huge quantities of data and applying statistical analysis will often lead to meaningless, if not misleading, results. Powerful computers and sophisticated statistical algorithms can process data and find patterns or trends, but they cannot explain the data and make predictions in a way that gives true insight to a decision maker. Data scientists are needed to run the analysis process and then to extract useful insights from the data to tell a meaningful story that helps solve a real problem.

Unlike many existing data analytics and business intelligence degrees, IIT’s program is firmly rooted in computational science and applied mathematics. A well-designed multidisciplinary degree program of this sort teaches students the essential theory, software engineering, and communication skills that data scientists need for success. A key component of our program is the practicum project, in which students work on teams to solve real-world problems. Our partnerships with local companies, both providers and users of data science technology, ensure the relevance of our educational experience.

Another key component of the IIT data science program is helping students develop the ethical and critical thinking skills needed to deal with the complex situations that naturally arise during the practice of data science. This program will teach students to understand and apply relevant ethical principles in their coursework through consideration of case studies, as well as by identifying ethical issues in their capstone practicum. A professional data scientist will have integrity and is able to clarify modeling assumptions and risks, will honor intellectual property rights, and will respect data privacy. IIT has integrated ethics into its undergraduate curriculum for years and is making sure graduate students have training in this area as well.

The director of the MAS-DS degree program is Shlomo Argamon, professor of computer science, and its assistant director is Lulu Kang, assistant professor of applied mathematics. The program evaluates applicants on a continuous schedule, for enrollment in either the fall or spring semesters. Applicants should have either academic or professional experience with computer programming, probability, and statistics; otherwise strong students lacking necessary prerequisites may be admitted and required to take extra coursework. To learn more, visit IIT’s website (http://iit.edu/data_science); to enroll, visit graduate admissions.
Advanced Placement Computing Principles Piloted at IIT

IIT was chosen with Bauer, senior lecturer of computer science and associate dean for academic affairs, as a teacher as a pilot site for the new "Advanced Placement Computing Principles" course, which is funded by the National Science Foundation through CollegeBoard.

Information Systems Security Recertification

The U.S. government’s Information Assurance Courseware Evaluation Program has recertified the Computer Science Department’s courses as meeting the national training standards for Information Systems Security Professionals and Systems Certifiers. These standards describe course content for studying telecommunications security and automated information systems security.

CUDA Research and Teaching Center Led by Zhiling Lan and Ioan Raicu

NVIDIA has selected the Computer Science Department as a 2013-2014 CUDA Research and Teaching Center, committed to advancing the state of parallel GPU research and education using the CUDA C/C++ programming model. The department has received a number of CUDA-capable GPUs (two Tesla K20 GPUs and five GTX480s) and 10 Massively Parallel Programming books for research and teaching purposes, plus $12,000 for teaching assistance. The centers are led by two faculty members (Ioan Raicu and Zhiling Lan) and two Ph.D. students (Scott Krieder and Eduardo Berrocal).
The science and engineering of networks such as computer networks and social networks has been attracting considerable research interest. At IIT, Xiang-Yang Li, professor of computer science, is taking on the challenge of understanding the fundamental performance behavior of large-scale wireless networking, and designing and implementing more energy-efficient networking technologies. Overcoming these challenges will enable a new class of energy-conscious wireless networks that deliver high-throughput networking and computing in a more environmentally responsible manner.

**Cognitive Radio**

As a promising solution to improve dynamic allocation of the underutilized spectrum, cognitive radio technology allows secondary users to opportunistically access vacant channels in both the temporal and spatial domain when the primary user is idle. Li’s group has developed a sequence of spectrum channel sensing, probing, and accessing methods that will theoretically guarantee that the average network throughput achieved under these methods will be asymptotically optimum, i.e., the difference between the throughput achieved by these methods and the optimum goes to zero over a time-horizon. Efficient channel access under multihop networks also requires decentralized design with low computation and communication. Li’s group recently designed methods for achieving maximum expected throughput through a decentralized learning process with low computation and communication cost.

**Coexisting Cross-Technology Networks**

Recent studies show that in urban areas, WiFi interference is pervasive and possibly the primary factor leading to ZigBee throughput degradation. Existing approaches for dealing with such interferences often modify either the ZigBee nodes or WiFi nodes. However, massive deployment of ZigBee nodes and uncooperative WiFi users call for innovative cross-technology coexistence without intervening legacy systems. In most of the previous studies, WiFi is often the signal of interest, and other mixed signals are eliminated as interference.

Recently, Li’s group has developed a new technology, ZIMO, focused on the WiFi and ZigBee coexistence when ZigBee is the signal of interest. ZIMO is a sink-based MIMO design for harmonic coexistence of ZigBee and WiFi networks with the goal of protecting the ZigBee data packets. The key insight of ZIMO is to properly exploit opportunities resulting from differences between WiFi and ZigBee, and bridge the gap between data of interest and cross technology signals. An extensive evaluation of the ZIMO protocol under real wireless conditions has shown that ZIMO can improve up to 1.9x throughput for the ZigBee network, with median gain of 1.5x, and 1.1x to 1.9x for the WiFi network as a byproduct of ZigBee signal recovery. Our design does not require modifications to and interventions on either WiFi APs or ZigBee transmitters.

**Cyber-Physical Systems**

The recent explosive growth of ultra-small and energy-efficient sensors is reshaping the landscape of many engineering systems, including but not limited to the smart electric grid, smart transportation, smart medical technologies, and advanced manufacturing. Cyber-physical systems are engineered systems that are built from and depend upon the synergy of computational and physical components. In the last decade, Li’s group has been developing the core system and networking science needed to engineer complex cyber-physical systems. In collaboration with Shangpin Ren, associate professor of computer science, Paul R. Anderson, professor of civil, architectural, and environmental engineering, and Fouad Peymour, Johnson Polymer professor of chemical and biological engineering, Li’s group studied the Chicago waterway systems by modeling it as loosely coupled networked control systems with external disturbances. The aim is to advance wastewater processing engineering procedures by taking advantage of available cyber technologies that can provide not only sufficient real-time accurate data collected from ground-based sensors, but also physics-based climate simulations to effectively predict the impact from nature on the wastewater processing.

Collaborating with researchers from several institutions, Li’s group designed and deployed wireless sensor networks, CitySee and GreenOrbs, for environment monitoring and study. The deployed sensor network is used for air quality monitoring, motivated by fighting global warming. The CitySee system, a collaboration by Li’s group and research institutions from Hong Kong and China, is composed of more than 1,200 nodes that continuously work for more than one year now. This is one of the largest sensor networking systems reported, to the best of the group’s knowledge.
The proliferation of social media—such as Twitter, Facebook, blogs, and Web forums—has created an unprecedented, continuous stream of messages containing the thoughts, opinions, and beliefs of millions of people. In addition to the primary benefits that users of this technology enjoy, a secondary benefit is emerging as scientists discover how to analyze this new data source to provide insights into society.

The nascent field of social media analysis combines expertise in natural language processing, data mining, machine learning, statistics, and databases to explore what we can infer from the behavior of social media users. Evidence is mounting that such analysis can provide insights into public health, finance, politics, social unrest, and natural disasters.

In addition to these societal benefits, the immediacy, openness, and volume of social media present great opportunities and challenges to natural language processing research. Out of necessity, most previous research focused on processing formal documents, such as news articles. With social media, researchers now have access to a rich repository of interactive human communication, enabling large-scale experiments that study dialogue dynamics.

The goal of Culotta’s research is twofold: (1) to leverage this unprecedented source of natural language data to advance research in automated processing of informal human communication; and (2) to apply these techniques to analyze trends in social media and produce socially beneficial technology.

In recent work, Culotta’s group has analyzed over 500 million Tweets from a nine-month period to generate estimates of flu activity in the United States. When they validated their approach against weekly statistics gathered by the U.S. Centers for Disease Control and Prevention, they found extremely strong correlations (.90-.95; see Figure 1). Similar strong correlations were identified for a diverse set of outcomes such as rates of alcohol consumption, obesity, and unemployment.

These surprising results suggest a great opportunity: Can social media be used to explore long-standing questions in public health and social science more generally? With this new window into the activities of millions of people, can new relationships among behavior, attitudes, and health be discovered? To fully realize the potential of this research, we must address many difficult technical questions. These range from long-standing issues in language processing (word sense disambiguation, entity resolution, relation extraction) to statistical methodology (controlling for demographic biases, determining significance with millions of comparisons) to geographical information science (locating the source of each message). Efforts are under way in all of these avenues. For example, Culotta’s group has recently developed accurate probabilistic methods to infer the origin of a Tweet based on its content and the user’s profile.

Culotta is excited to have the opportunity to pursue this research agenda here at IIT. In addition to the wonderful students and faculty working on related topics in the Computer Science Department, the interdisciplinary nature of this work is a great fit for the university’s strong cross-department connections, such as the digital humanities and the data science initiatives. He is looking forward to many fruitful collaborations, and invites anyone interested (students, faculty, or others) to please feel free to contact him to discuss further.

Figure 1: Proportion of the U.S. experiencing influenza-like illness (ILI) during the 2009 flu season according to the CDC (black line) as compared to our estimate from Twitter analysis (red dotted line). The correlation on the fit data is .82; on the held-out data it is 0.9.
Awards + Outreach

Sun, professor of computer science and chair of the department, has been appointed an Overseas Expert by the Chinese Academy of Sciences (CAS). He was one of 47 distinguished scholars from world-renowned universities and research institutions so named in 2013. As part of this appointment, Sun was awarded a K.C. Wong Education Foundation Fellowship for three years. The CAS is a leading academic institution and comprehensive research and development center in natural science, technological science and high-tech innovation in China. Today’s CAS has 12 branch offices, 117 institutes, and more than 100 national key laboratories and national engineering research centers.

CS Undergraduate Takes Second Place in 2012 ITA Fall Challenge

Computer Science student Jesse Young took second place in the undergraduate fall competition of the Illinois Technology Association.

IIT Teams Compete in 2012 Mid-Central USA Programming Contest

IIT programming teams participated in the 2012 Mid-Central USA programming contest sponsored by the Association for Computing Machinery and IBM. Team IIT-A finished third at the University of Chicago contest location and ninth in the five-state region.

Dennis Roberson Providing Leadership for IIT’s Strategic Plan Integration Committee

Roberson, research professor of computer science and vice provost for research, leads the committee responsible for writing the next strategic plan for Illinois Institute of Technology.

(left) Alumnus JongSub Moon (Ph.D. CS ’91) with IIT President John Anderson at the Gyeongbokgung Palace

(below) Alumnus Seongbok Baik (Ph.D. CS ’04) with Sun at the Conrad Seoul Hotel
Outreach

IIT Computer Discovery Camp for Middle-School Girls

This past summer, the IIT Computer Discovery Camp offered an opportunity for more than 30 middle-school girls from Chicago and surrounding communities to gain hands-on experiences with computing technology. The students worked with Lego Mindstorm kits to build and program robots and also learned to design and program web pages using HTML.

This summer camp has been offered to the community since 2010 and has expanded to include a Saturday afternoon club for summer campers who would like to continue exploring computer technology and others who cannot make the summer camp. “One of the most important aspects of the summer camp and Saturday program is the social component of bringing girls together who really enjoy working and learning about technology. We have girls who have attended our camp for the last three summers and who also participate in our Saturday program,” says Vida Winans, senior instructor of computer science and organizer of the programs.

These programs were initiated as part of a National Science Foundation (NSF) Broadening Participation in Computing grant awarded to Computer Science Professor Cynthia Hood, and are currently funded by the Computer Science Department, the IIT College of Science, the Office of Student Access and Diversity, and generous alumni donations.

With a goal of institutionalizing the outreach programs and getting more computer science students involved, IIT CS has joined the STARS Alliance (www.starsalliance.org), an NSF-sponsored program that provides start-up funding, structure and support for a large network of universities to create student Leadership Corps. STARS Leadership Corps provide a mechanism for empowering students to develop and strengthen leadership skills with a focus on community outreach along with retention in the computer science discipline.

Last year the newly formed IIT STARS Leadership Corps developed activities for and taught in the Saturday club and also helped organize and run an after-school Lego Mindstorm program for sixth to eighth-graders at a local school. This year, in addition to running the Saturday club, the STARS Corps is working on developing a mentoring program for computer science undergraduates. This fall, incoming freshmen have been introduced to the STARS Leadership Corps and are getting involved in the outreach programs.

Matthew Bauer and Shlomo Argamon Quoted in Chicago Tribune
Bauer, senior lecturer of computer science and associate dean for academic affairs, and Argamon, professor of computer science, were quoted in the article “Boundless Opportunities Exist in the Computer Science, Info Tech Fields,” which appeared in the October 29, 2012, issue of the Chicago Tribune. Bauer discussed the introduction of new undergraduate specializations; Argamon talked about computer science as a new kind of literacy and about interest in mobile applications.

Xian-He Sun To Co-Chair IEEE BDDS2013 Conference
Sun, professor of computer science and chair of the department, is serving as a general co-chair of the 2nd IEEE International Conference on Big Data and Distributed Systems (BDDS2013). The conference will be held in Sydney, Australia, in December 2013.

Xiang-Yang Li To Co-Chair IEEE MASS 2013 Conference
Li, professor of computer science, will co-chair the 10th IEEE International Conference on Mobile Ad Hoc and Sensor Systems (IEEE MASS 2013). The conference will be held in Hangzhou, China, on October 14-16, 2013.

Xiang-Yang Li To Co-Chair ACM Mobihoc 2014 Conference
Li, professor of computer science, will co-chair the 15th ACM International Symposium on Mobile Ad Hoc Networking and Computing (ACM Mobihoc 2014). The conference will be held in Philadelphia on August 18-21, 2014.

Xian-He Sun Quoted by PCWorld for His Contribution of the Sun-Ni’s Law
Sun, professor of computer science and chair of the department, was quoted in the PCWorld article “Scientist Out To Break Amdahl’s Law.” He spoke of Sun-Ni’s law, which he established and which introduces memory constraint as a limitation on problem execution. The article, in different forms, also appeared in ComputerWorld UK, CIO.com, and other places through the IDG News Service.

Forbes Articles Cover New Data Science Program at IIT Represented by Shlomo Argamon
Gil Press, contributor at Forbes, held a virtual panel on “Data Science: What’s the Half-Life of a Buzzword?” featuring Argamon, professor of computer science; Gregory Piatetsky-Shapiro, Ph.D., president of KDnuggets; and Meta Brown, a consultant and writer on business analytics. Another Forbes article (“For Data Scientists, Math Skills Are Not Enough”) by Tom Groenfeldt also featured Argamon discussing the new data science program at IIT.
Marius D. Soneru Retired
Soneru, senior lecturer of computer science, retired in December 2012. He imparted his strong interest in broadband networks, data communications, Internet evolution to broadband, and multimedia services to 30 years of computer science students. Soneru finished his Ph.D. in computer science at IIT in 1981 and holds two M.S. degrees, one in computer science from the University of California at Los Angeles and one in electrical engineering from Polytechnic Institute of Bucharest.

Starting in 1982, he taught part-time at IIT as an adjunct assistant professor and later as an adjunct associate professor. During this time he was also a manager and then senior manager at AT&T Bell Labs, which later became Lucent Bell Labs. In 2001 he took early retirement from Lucent and joined the Computer Science Department as a full-time senior lecturer.

Tzilla Elrad Retired
Elrad, research professor of computer science who joined the department in 1982, has retired. She taught in both the computer science and applied mathematics departments. Her research interests include software architecture for concurrent systems, reactive/adaptive intelligent systems, design issues of concurrent programming languages, and formal verification. Elrad received her B.S. in mathematics, physics, and education from the Hebrew University, Jerusalem, and her M.S. and Ph.D. in computer science from Syracuse University and Technion Israel Institute of Technology, respectively. In recent years she has focused on aspect-oriented software development, particularly its application to concurrent programming. Some of her current and recent projects include Motorola WEAVR, an industrial strength Aspect-Oriented Software Development tool that supports weaving of UML 2.0 behavioral models, the Dynamic Aspect C++ compiler (DAC++), an extension to the C++ compiler that supports dynamic aspect orientation, and the Aspect Interference Detector (AID), a framework that detects potential interference among aspects and between aspects and the base model in Aspect-Oriented Modeling (AOM).

Remembering Peter Lykos
The contributions made by Peter Lykos, Professor Emeritus of Chemistry, who died on July 16, 2013 at age 86, to research and teaching in chemistry at Illinois Institute of Technology have been described elsewhere, but not many people know of his role in the development of computer science instruction at IIT and across the country. In 1959 Peter Lykos taught 25 chemistry students about computers and their instruction sets and had them write a machine language program to carry out a linear regression on previously collected data.

One of Lykos’ nephews, who was attending high school in Chicagoland, told his high school Math Club adviser what his uncle was doing and the adviser arranged for the club to spend a whole day at IIT with Lykos carrying out the same programming exercise that the chemistry students had done (using some data that those students had left behind). This was such a success that IIT began to provide computer education to high school students through the Saturday High School program. At first these courses were taught by instructors from industry. In 1963 Lykos hired Charles Bauer to teach the Saturday program. In 10 years, Lykos told Martha Evens, professor emerita in computer science, “15,000 high school students and 1,200 teachers studied under this program.” (After he retired from Lane Technical High School, Charles Bauer became a full-time faculty member in computer science and he is still teaching at IIT in 2013.)

In 1968, after much urging by Lykos, the university administration finally agreed on an M.S. program in Information Science with Peter Lykos as director. After 1971 Lykos spent two years working for the National Science Foundation and then, back at IIT, he became a driving force in the addition of achievement tests in computer science to the SAT, ACT, and eventually the GRE. He was an active member of the American Chemical Society, where he helped create the ACS Division of Computers in Chemistry and, in 2011, he was elected as director of the ACS Chicago Section.
### The Computer Science Department in Numbers

#### ALUMNI NUMBERS (1956–2013)

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<th>Degree</th>
<th>Count</th>
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<td><strong>TOTAL</strong></td>
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#### CURRENT STUDENT NUMBERS

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<td>(7 of those 206 are also getting M.S. or M.A.S. coterminal)</td>
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<tr>
<td>Undergraduate Part-Time</td>
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<td>M.S./M.A.S.</td>
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#### FACULTY

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<tr>
<td>Industry Professors</td>
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<tr>
<td>Instructors and Lecturers</td>
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<tr>
<td>Adjunct</td>
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<td>Emeriti</td>
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<tr>
<td>IEEE Fellows and ACM Fellows</td>
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#### FUNDING

<table>
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<tr>
<th>Year</th>
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<th>Industry</th>
<th>Total Awards</th>
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<td>38,000</td>
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