The IEEE Newsletter

PUBLICATION OF THE NORTH JERSEY SECTION OF THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

NJ Communications Society:

Secrecy Capacity of Multi-terminal Networks with Pricing

On Monday, March 3, 2008, the IEEE Communications Society will host a presentation titled "Secrecy Capacity of Multi-terminal Networks with Pricing". The speaker will be Dr. Anand Santhanakrishnan.

About the Talk

Secrecy capacity is a measure of the information theoretic capacity of a key-less secure channel. It is the maximum information transfer rate such that the receiver error probability approaches zero while an eavesdropper's error probability goes to 1/2. Most approaches in the literature study secrecy capacity for a single source-destination pair in the presence of a single eavesdropper. In this talk, we present secrecy capacity results for multi-terminal networks considering the multi-access interference due to multiple source-destination pairs. We propose a pricing function to limit the transmit powers of the transmitters. We present mathematical conditions on the pricing parameters that result in optimal power allocation to maximize the secrecy capacities. We further show that the solution to the power allocation problem is independent of the location of the eavesdropper. It is also observed that the pricing model improves the secrecy of the weakest transmit-receive pair.

About the Speaker

Anand Santhanakrishnan completed his Bachelor of Engineering (BE) degree from College of Engineering Guindy, Anna University, Chennai, India and his Master of Engineering (ME) and PhD degrees from the Indian Institute of Science, Bangalore, India. His thesis was on radio resource allocation in cellular networks, with focus on dynamic channel allocation in channelized cellular networks and admission control and power and rate allocation in cellular CDMA. He has also participated in the 3GPP forums on system architecture evolution for UMTS-LTE system with focus on IP mobility. He has also participated in the IEEE 802.20 mobile broadband wireless access (MBWA) forums. He is currently working as a post doctoral researcher in MSyNC lab in the Department of ECE in Stevens Institute of Technology. His current areas of interest include resource allocation, network selection and secrecy capacity in cognitive radio networks. He also participates in the 1900 A study group activities for dynamic spectrum access.

All Welcome!

You do not have to be a member of the IEEE to attend.

Time: 6:15 PM, Monday, March 3, 2008. Refreshments will be available at 6:00 PM.

Place: New Jersey Institute of Technology (NJIT), Room 202, ECE Center (Intersection between Warren & Summit Streets), Newark, NJ. Directions are available at http://www.njit.edu/University/Directions.html.

Information: Dr. Nirwan Ansari (973) 596-3670 (nirwan.ansari "AT" njit.edu) or check http://web.njit.edu/~ieeenj/comm.html for the latest updates.

2008 R1 Student/GOLD /WIE Conference April 26, FDU-Teaneck, NJ

Attention all members, the upcoming regional student conference with paper contest and micromouse competition will be held locally in the IEEE North Jersey Section. It is planned for Saturday, April 26, at Fairleigh Dickinson University in Teaneck, NJ, with an opening reception on the night of Friday April 25th. This year's Region 1 Graduates of the Last Decade and Women In Engineering conference will be held jointly with the student conference at the same location.

There will be parallel programs of activities, introduction to GOLD, and WIE, GOLD/WIE affinity group leadership training, a variety of seminars on different topics, a career fair, and social events. The committee is still seeking corporate sponsors and career fair participants, booths are still available, see the website below for contact information.

The details of the program, registration, and pricing for the GOLD conference can be found online at the Region 1 GOLD website linked from here http://www.ewh.ieee.org/reg/1/gold/conference. Don't miss this opportunity to participate in a Regional event, locally right here in North Jersey. Register now! If you have additional questions, feel free to email northjerseygold "AT" ieee.org.

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IEEE NJ SECTION HOME PAGE
http://web.njit.edu/~ieeenj/
IEEE NJ SECTION NEWSLETTER HOME PAGE
http://web.njit.edu/~ieeenj/NEWSLETTER.html

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IEEE Service Center, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331, (732) 981-0060. It is not necessary to inform the North Jersey Section when you change your mailing address. "The IEEE Newsletter" and other section mailings use a list provided by IEEE's national headquarters.

The North Jersey Section Executive Committee usually meets the first Wednesday (except holidays and December) of each month at 7:00 PM. Meetings are open to all members. For information on meeting agenda contact Secretary Russell Pepe at (201) 960-6796, rpepe "AT" att.net.

Region 1 Award Nominations

Nominate a colleague. Region 1 of IEEE offers a variety of awards to recognize the engineering accomplishments of members. Specific award categories include: technological innovation, engineering organization, academic teaching, enhancement of IEEE image in the public or industry and sustained IEEE service. To obtain additional information about these categories visit the Region 1 website

www.ieee.org/r1

Once at the site click on Section Information on the far right column. On the Section page click on Region 1 Awards Information. We will assist you. To nominate a qualified individual prepare a 200-word summary (including the individual's name, IEEE number and IEEE US postal mail address) specifying the accomplishment of the candidate.

Send the summary to our Awards Chair *Ken Oexle, 11 Deerfield Road, Whippany, NJ 07981*, prior to May 1. The North Jersey Awards Committee will review the summary; suggest any changes; complete the nomination form; and forward it to the Region 1 Awards committee with a Section endorsement.

Award nominations are evaluated and approved at the Region 1 Summer Meeting and plaques are presented at the following North Jersey Section Annual Awards Reception.

IEEE-USA in Action:

2008 Public-Awareness Program Launched to Bolster Image of Engineers, Engineering

Washington (22 January 2008) - As part of its long-term, ongoing effort to improve the public's understanding and appreciation of engineering, IEEE-USA has launched its 2008 public-awareness program that reaches out to youngsters, adults and the public-at-large through a variety of media targeted to specific audiences. The IEEE-USA Board has approved $72,000 in support of special public-awareness projects, plus $40,000 in related public-relations expenses for a total of $112,000 dedicated to bolstering the image of engineers and engineering in 2008. The public-awareness program includes six components:

- Adding IEEE technologies to TV engineering news spots developed through the American Institute of Physics (AIP) "Discoveries & Breakthroughs" syndication service of 12 monthly reports in English and Spanish distributed to more than 100 U.S. TV stations (for details, see http://www.aip.org/dbis/IEEE/)
- Helping print and broadcast journalists communicate authoritatively to the public about engineering and science through the placement of two IEEE-USA Engineering Mass Media Fellows in media outlets as part of the AAAS program (for details, see http://www.ieeeusa.org/communications/massmedia.asp)
- Recognizing journalists for furthering the public's understanding of the engineering profession with two $1,500 honorariums (for details, see http://www.ieeeusa.org/volunteers/awards/award8.html)
- Demonstrating engineering support for community activities and reaching Washington opinion leaders through promotional announcements on the U.S. capital's only classical music station, WETA-FM at http://www.weta.org/
- Launching an online engineering video competition for undergraduates on "How Engineers Make a World of Difference" with $10,000 available in scholarship awards to be announced during Engineers Week from 17-23 February (for details, go to http://www.ieeeusa.org/communications/video_competition/)
- Introducing youngsters to basic engineering concepts and communicating engineers' support for local community activities through the National Engineers Week 2008 Discover Engineering Family Day to be held at the National Building Museum in Washington, D.C. on 16 February (for details, see http://eweekdcfamilyday.org/)

Improving the public's understanding and appreciation of engineering continues to be a top priority for U.S. IEEE members. IEEE-USA has been actively involved in promoting public awareness of engineers and engineering for more than 25 years.

For more information on IEEE-USA's public-awareness program, a brochure can be viewed and downloaded at http://www.ieeeusa.org/communications/files/PAbrochure.pdf.

Contact: Pender M. McCarter
Senior Public Relations Counselor
IEEE-USA
Phone: (202) 530 8353
p.mccarter@ieee.org

IEEE North Jersey Section Activities
March 2008

Mar. 3 – "Secrecy Capacity of Multi-terminal Networks with Pricing" – by Dr. Anand Santhanakrishnan, NJ Communications Chapter, 6:15 PM, New Jersey Institute of Technology (NJIT), Room 202, ECE Center, Newark, NJ. Dr. Nirwan Ansari (973) 596-3670 (nirwan.ansari "AT" njit.edu) or check http://web.njit.edu/~ieeenj/comm.html for the latest updates

Mar. 5 – "NJ Section Meeting", 6:30 PM, "Executive Committee Meeting" - 7:00 PM, ITT, 77 River Rd, Clifton, NJ. Russell Pepe at rpepe "AT" att.net.

Mar. 11 – "Exploiting Link Rate Diversity for High-Performance Wireless Meshes" – by Dr. Archan Misra, NJ Communications Chapter, 6:30 PM, New Jersey Institute of Technology (NJIT), Room 202, ECE Center, Newark, NJ. Dr. Nirwan Ansari (973) 596-3670 (nirwan.ansari "AT" njit.edu) or check http://web.njit.edu/~ieeenj/comm.html for the latest updates

Mar. 11-May 6 – "Project Management" by Dr. Donald Hsu, North Jersey Section, Tuesday Evenings, 8 sessions, 6:30-9:00 PM, NJ International Bulk Mail Center, 80 County Rd, Jersey City, NJ. Donald Hsu (yanyou "AT" hotmail.com).

Mar. 12 – "Engineers Meet: Jobs, Fading Opportunities & Ethics" with Dr. Stephen H. Unger, NJ PACE, GOLD, WIE, 6:30 – 9:00 PM, Clifton Memorial Library, 292 Piaget Ave, Clifton, NJ. Paul Ward, (973) 790-1625, PWard1130 "AT" aol.com, Richard F. Tax, (201) 664-6954, rftax "AT" verizon.net.

Mar. 25 – "Undergraduate Student Paper Contest", SAC, 5:30 PM, Fairleigh Dickinson University, Room M105 Auditorium, Muscarelle Building, 1000 River Road, Teaneck, NJ. Any and all questions can be emailed to the contest organizer, northjerseysac "AT" ieee.org.

Mar. 27 – "Graduate Student Paper Contest", SAC, 5:30 PM, Fairleigh Dickinson University, Room M105 Auditorium, Muscarelle Building, 1000 River Road, Teaneck, NJ. Any and all questions can be emailed to the contest organizer, northjerseysac "AT" ieee.org.

Mar. 27 – "Simulation, Virtual Instruments in Design" by Patrick Noonan, NJ Consultants' Network, 7:30 PM, Aeroflex/KDI-Integrated Products, 60 S. Jefferson Rd, Whippany, NJ. Robert Walker (973) 728-0344 or www.TechnologyOnTap.org.

Upcoming Meetings

Apr. 2 – "NJ Section Meeting", 6:30 PM, "Executive Committee Meeting" - 7:00 PM, ITT, 77 River Rd, Clifton, NJ. Russell Pepe at rpepe "AT" att.net.

Apr. 9 – "Electron Devices in Astronomy" by Dr. Lucian Kasprzak, NJ EDS/C&S Chapters, 7:00 PM, New Jersey Institute of Technology (NJIT), Room 202, ECE Center, Newark, NJ. Dr. Richard Snyder (973) 492-1207 (RS Microwave), Dr. Edip Niver (973) 596-3542 (NJIT), or Dr. Durga Misra (973) 596-5739 (dmisra "AT" njit.edu).

Apr. 25 – "Harmonics Seminar", NJ PES/IAS, Time TBD, Facility in North Jersey to be determined. Detailed information to follow in the April Newsletter and on the North Jersey Section website.

Apr. 25 & 26 – "Region 1 Student Conference", NJ SAC-GOLD-WIE, Time TBA, Fairleigh Dickinson University, 1000 River Road, Teaneck, NJ. Russell Pepe, rpepe "AT" att.net.

Apr. 26-27 – "Trenton Computer Festival", Saturday 10:00 AM to 5:00 PM and Sunday 10:00 AM to 4:00 PM, The College of New Jersey in Ewing, NJ. Allen Katz, TCF Speaker Program Chairperson, a.katz@ieee.org or (609) 771-2666.

Apr. 28-30 – "2008 Sarnoff Symposium", Nassau Inn, Princeton, NJ. See details at http://www.sarnoffsymposium.org.

May 4 – "NJ Section Awards Reception" - 3:00 to 6:00 PM at the Birchwood Manor, 111 North Jefferson Rd, Whippany, NJ. Anne Giedlinski (973) 377-3175.

Members and Non-Members Welcome

PLEASE POST

NJ EDS/C&S Chapters:

Electron Devices in Astronomy

On April 9, 2008, the IEEE NJ Section Electron Devices, Circuits and Systems Chapters together with the New Jersey Institute of Technology will host a talk on "Electron Devices in Astronomy." The speaker will be Dr. Lucian Kasprzak.

About the Talk

Gazing at the stars has intrigued man since the dawn of the first civilizations. Available technology and mathematics have helped man posit answers to the questions of man's place in the universe, how it came about, where it is headed and what it means. Ancient cultures used the solar and lunar cycles, as well as the cycle of the stars, to perfect agriculture and attempt to predict the future as well as posit theories of the universe. Modern man is no exception and continues this paradigm.

Electron devices, in the twenty first century, are present in literally everything that touches man, both directly and indirectly. Electron devices in many embodiments have also brought astronomy to new heights of observational perfection. The precision now achievable, facilitated by the use of electron devices, permits a new level of refinement for both theory and experiment. The largest earthbound telescopes in use today are typically 10 meters, compared to Hubble Space Telescope at 2.4 meters. New telescopes, in the 25, 50 and 100 meter range, are in design or construction around the world. The specific electron device applications used in modern telescopes include detectors, encoders, actuators, feedback control systems, custom computers and computer programs. These devices and innovations have enabled a series of telescope improvements, such as, active optics (mirror shape correction), adaptive optics (atmospheric turbulence correction), interferometry and large baselines.

Since one objective of astronomy is observation, the question of resolution and sensitivity of the tools for observing become a paramount concern for those doing the observation. The theoretical resolution of a telescope is the diffraction limited distance between two discernable objects. This limit is rarely even approached for telescopes with primary diameters greater than about 20 cm. The problem has to do with nature of the objects being imaged (points of light) and the aberrations inherent in optical instruments, which are dependant upon the perfection of the curvature of the lenses or reflectors used to form the image. The technique known as active optics makes corrections to the curvature of the primary mirror to reduce or eliminate these aberrations. Properly placed and monitored electron devices have made active optics a reality for modern telescopes.

Sensitivity of a telescope implies how faint an object can be resolved or seen. It depends upon the detector, signal and noise, as well as how well the object in question can be tracked as it moves across the night sky. Modern low noise CCD detectors and precise tracking mechanisms opened a new era in telescope imaging and photometry.

Seeing, as used astronomy, means how much is the image blurred by turbulence in the air between the telescope and the vacuum of space. The Hubble Space Telescope sees very well because it is in orbit above the earth's atmosphere. Earth bound telescopes today use adaptive optics (AO) to correct for this blurring. AO uses the turbulence information, from a guide laser in the direction of the object being viewed, to make real time correction to the image received by the CCD detectors. This method is so effective that properly instrumented earth bound telescopes can see objects as well as, or in some cases, better than the Hubble Space Telescope.

The contribution of electron devices, to these advances and others, will be presented in the context of the general objectives of astronomy.

About the Speaker

Dr. Kasprzak worked for IBM from 1965 to 1995. He obtained his PhD on an IBM Resident Fellowship in 1972 from Stevens Institute of Technology. He taught at Franciscan University from 1992 to 1996. Since 1996 he has worked in the healthcare industry, first on solid state x-ray detectors for Direct Radiography Inc.(an eventual subsidiary of Hologic Inc.), and now on large clinical chemistry analyzer instruments for Dade Behring, recently purchased by Siemens.

His work has focused on the physics and materials of electron devices. In practice he has developed reliability tests to reveal the limitations of electron devices, materials, VLSI circuits and PCBs. In 1973 he discovered the hot electron effect in very short (1.25 micron n-channel) MOSFETs.

He has taught Astronomy and Cosmology as well as Physics and Materials at Franciscan University. His experience, coupled with his interest and study of astronomy, brings a unique perspective to the application of electron devices in astronomy.

He is the founder of IEEE transactions on Device and Materials Reliability, treasurer of IEEE transactions on Semiconductor Manufacturing, a member of the Board of Directors of the International Reliability Physics Symposium and a Fellow of the IEEE.

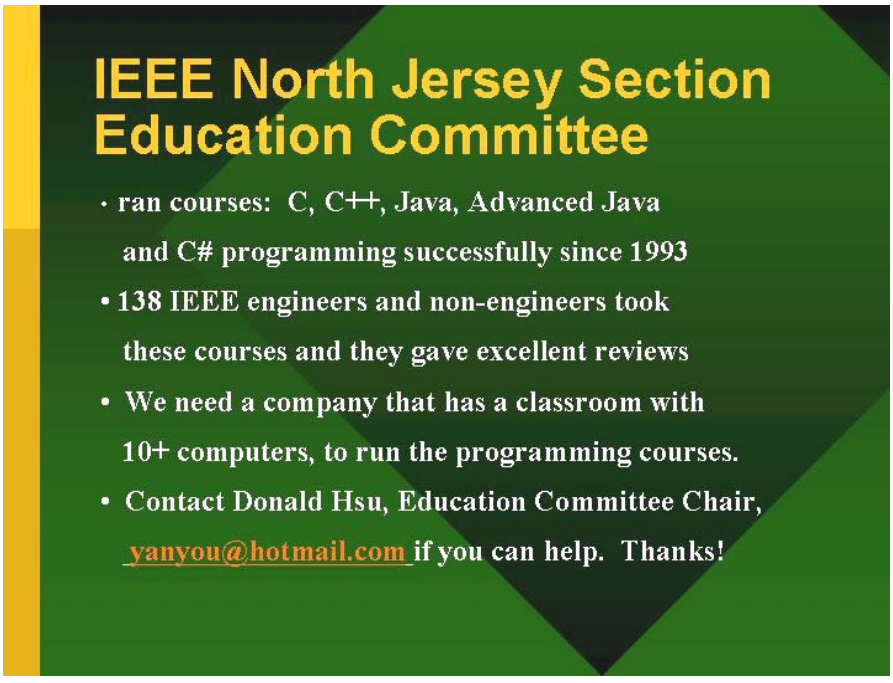
All Welcome!

You do not have to be a member of the IEEE to attend.

Time: 7:00 PM, Wednesday, April 9, 2008. Free buffet will begin at 6:15 PM.

Place: New Jersey Institute of Technology (NJIT), Room 202, ECE Center, Newark, NJ. Directions are available at http://www.njit.edu.

Information: Dr. Richard Snyder (973) 492-1207 (RS Microwave), Dr. Edip Niver (973) 596-3542 (NJIT), or Dr. Durga Misra (973) 596-5739 (dmisra "AT" njit.edu).



NJ Section PACE, GOLD, & WIE:

Engineers Meet:

Jobs, Fading Opportunities & Ethics

On Wednesday, March 12, 2008 the North Jersey Section Professional Activities Committee, Graduates of the Last Decade & Women In Engineering will meet for a discussion about jobs, fading opportunities and ethics.

About the Meeting

Jobs of American engineers are fading away due to two interrelated processes. One is the importing of engineers from low-pay countries, and the other is the exporting of jobs. Manufacturing jobs are also disappearing, along with many other middle class jobs, due to the "globalization" process--also called "free trade"--that has been dismantling our industrial base. This is not due to the operation of natural laws. It is the result of a political process controlled by powerful corporate interests.

A seemingly unrelated subject is the plight of engineers who try to practice their profession in an ethical manner and, as a result, find themselves in trouble with their employers. An example is that of Michael DeKort, whose efforts to correct serious defects in equipment, being produced, for the US Coast Guard led to a dramatic struggle with his employer, the Lockheed Martin Corporation.

The link between these subjects is that individuals acting alone in conflict with large organizations are seldom going to succeed. Engineers need to band together in democratically run organizations to generate the clout necessary to defend their livelihoods, and their rights to carry out their professional duties in a manner acceptable to their consciences

Bring your associates, friends and spouses.

About the Speaker

Our speaker will be Dr. Stephen H. Unger. Dr. Unger is a Professor of Computer Science (and Electrical Engineering) at Columbia University. Previously he worked at Bell Labs and, while at Columbia, he worked for various companies including IBM and RCA Labs during summers and sabbaticals. Apart from technical publications, he has written about, and given many talks on, technology policy issues, including engineering ethics, the engineering job situation, energy, and government imposed secrecy. He was a founder, and later President of, the IEEE Society on Social Implications of Technology. A decade ago, he served on the IEEE Board of Directors, and on various IEEE Boards including the US Activities Board (now called IEEE-USA). He was a member of the IEEE Ethics Committee 1995-98 (as chair 1997-98).

All Welcome!

Members and students from all professional societies and engineering disciplines are welcome. We now have attendees from IEEE, ASME, NSPE, ASCE and AEA. For information about these groups see:

www.aea.org
www.ieeeusa.org/policy/care/
www.ieeeusa.org
www.programmersguild.org
http://web.njit.edu/~ieeenj/
www.asme.org/sections/northjersey

CARE is the Congressional Advocacy Recruitment Effort. CARE is a voluntary network of IEEE members who are interested in public policy. To help go to www.ieeeusa.org/policy/care/.

Time: 6:30 PM to 9:00 PM, Wednesday, March 12, 2008. Refreshments will be served.
Place: Clifton Memorial Library, 292 Piaget Ave, Clifton, NJ, (973) 772-5500.
Information: Paul Ward, (973) 790-1625, PWard1130 “AT” aol.com, Richard F. Tax, (201) 664-6954, rftax “AT” verizon.net.

NJ Communications Society:

Exploiting Link Rate Diversity for High-Performance Wireless Meshes

On Tuesday, March 11, 2008, the IEEE Communications Society will host a presentation titled “Exploiting Link Rate Diversity for High-Performance Wireless Meshes”. The speaker will be Dr. Archan Misra.

About the Talk

Multi-hop wireless meshes may provide a low-cost access architecture for many urban communities; however, the low traffic capacity and high latency of multi-hop wireless networks continues to be a critical challenge. In this talk, we’ll discuss advances for supporting broadcast/multicast-based applications in such meshes, specifically focusing on the consequences of allowing individual mesh nodes to dynamically adjust their link transmission rate for link-layer broadcasts. We shall demonstrate how the tradeoff between the transmission rate and the coverage area motivates the use of Rate-Area Product (RAP) as a metric for choosing evaluating the effectiveness of various broadcast rates. We’ll show that exploitation of such multi-rate capability can a) lower the broadcast latency by as much as 60-80%, and b) increase the admissible multicast traffic load by ~50%. Moreover, we shall point out interesting interactions between rate diversity and channel diversity in wireless environments. Also, the use of rate diversity must be balanced with reliability, as the end-to-end delivery rates may otherwise prove to be unacceptably low. We shall describe early work suggesting how wireless meshes may be architected to achieve the right balance between raw capacity and reliable delivery.

About the Speaker

Archan Misra is a Researcher at the IBM TJ Watson Research Center, Hawthorne, NY. At IBM, for the past 7 years, he has been working on and leading projects in the broad areas of high-performance wireless mesh networks, presence architectures for converged applications, information processing for sensor-based networks and remote health monitoring. He has published extensively in the areas of wireless networking, pervasive services and mobility management and is a co-author on papers that received the Best Paper awards in ACM WOWMOM 2002 and IEEE MILCOM 2001. Archan holds a PhD in Electrical and Computer Engineering from the University of Maryland at College Park, and a B.Tech in Electronics and Communication Engineering from IIT Kharagpur, India. He is currently an editor of the IEEE Wireless Communications Magazine and the Journal of Pervasive and Mobile Computing, and is the outgoing chair of the IEEE Computer Society’s Technical Committee on Computer Communications (TCCC).

All Welcome!

You do not have to be a member of the IEEE to attend.

Time: 6:30 PM, Tuesday, March 11, 2008. Refreshments will be available at 6:15 PM.
Place: New Jersey Institute of Technology (NJIT), Room 202, ECE Center (Intersection between Warren & Summit Streets), Newark, NJ. Directions are available at http://www.njit.edu/University/Directions.html.
Information: Dr. Nirwan Ansari (973) 596-3670 (nirwan.ansari “AT” njit.edu) or check http://web.njit.edu/~ieeenj/comm.html for the latest updates.

NJ Consultants' Network:

Simulation, Virtual Instruments in Design

On Thursday, March 27, 2008, the IEEE Consultants' Network of Northern NJ (www.technologyontap.org) will host a talk on "Simulation, Virtual Instruments in Design." The speaker will be Patrick Noonan.

About the Topic

Virtual Instrument technology has widely been used for test, measurement and system level design. National Instruments is pioneering a new use of Virtual Instrumentation – the use of advanced measurement and instrumentation techniques that can be used in conjunction with SPICE based simulation technology to improve the overall design, development and testing of circuit level designs.

Several design scenarios will be given in the area of analog, digital and mixed signal designs to highlight the capability and feasibility of using Virtual Instrumentation techniques in the design flow. A demonstration of a board level Sigma-Delta design using SPICE and Virtual Instrumentation technology will be showcased to highlight these concepts. Both the SPICE based simulation and board level design of the Sigma Delta will be demonstrated and discussed in the session.

About the Speaker

The talk will be given by Patrick Noonan, Business Development Manager, representing National Instruments – Electronics Workbench Group.

About the Consultants' Network

Founded in 1992, the IEEE Consultants Network of Northern NJ encourages and promotes the use of independent technical consultants by business and industry.

All Welcome!

Everyone welcome. No registration needed. Free admission.

Time: 7:30 PM, Thursday, March 27, 2008.
Place: Aeroflex/KDI-Integrated Products, 60 S. Jefferson Rd, Whippany, NJ. (Entrance at rear of building).
Information: For directions and up-to-date meeting status, call Robert Walker (973) 728-0344 or visit our website at www.TechnologyOnTap.org. To download a map to KDI, go to: http://www.mcekdi-integrated.com/directions.htm.

North Jersey Spring 2008 Student Presentation Contest

The Spring 2008 Student Presentation Contest is coming up! The North Jersey Section will be holding presentation contests scheduled for March 25 for undergraduate students and on March 27 for graduate students. This contest has been held in years past. Its overwhelming success in generating student participation and interest make it a fantastic event for up and coming engineers. This year's contest will feature similar prizes ($$$) and have graduate and undergraduate categories.

The main focus of the presentation contest is to give students an opportunity to sharpen their communication skills, and help prepare for real life situations as practicing engineers and researchers. Additionally, the North Jersey Section contest provides an excellent chance for students to practice for the Region I Student Paper contest in the spring.

The contest at the North Jersey Section level is also supplemented by awarding cash prizes to the three best presentations in both graduate and undergraduate categories. All engineering students are encouraged to participate in submitting team or individual presentations on any project work related to engineering. This local contest does not require students to write a full paper, just a slide-based presentation on technical or non-technical work is sufficient. Senior design projects, lab projects, personal engineering hobbies, engineering policy etc. are great topics to submit. Moving onto the regional contest requires submitting a short written paper.

The details of contest rules, judging criteria, viable topics for presentations, and abstract form will be same as last year. Also, if you would like to get an idea of what topics would be appropriate or how you can prepare your abstract, take a look at winners from past years at the NNJ IEE SAC homepage archive.

This year's North Jersey Section Contest will be open to graduate and undergraduate students and first/second/third place prizes will be awarded in each category of $100/$75/$50. All participants must register by submitting an abstract by filling in the form available at the SAC website to qualify as a contest participant.

Time: Tuesday, March 25, 2008 (Under-Graduate Students), and Thursday, March 27, 2008. (Graduate Students), starting with dinner at 5:30 PM.
Place: Fairleigh Dickinson University, Room M105 Auditorium, Muscarelle Building, 1000 River Road, Teaneck, NJ (Free Parking available). http://www.fdu.edu/visitorcenter/directions/teaneck_map.html
Information: Any and all questions can be emailed to the contest organizer, northjerseysac "AT" ieee.org.

North Jersey Section Seeks Committee Chairs and Volunteers

The North Section is seeking new volunteers to help conduct business for the benefit of its membership. There are a variety of volunteer positions open and available. They range from technical to non-technical, leadership or just participatory. For Society Chapter Chairs, you must be a member of the corresponding IEEE Society.

If you would like to become involved with volunteering in some of these efforts or positions or just become more informed about what is happening at the North Jersey Section, please contact Dr. Chandra Gupta at c.gupta "AT" ieee.org. You are welcome to attend the Section business meeting held the first Wednesday of every month to find out more and other volunteer activities that require some help.

Some committees needing volunteers include the following. Please contact the person indicated for additional information.

- Power Electronics Society Chapter Chair - contact c.gupta below.
- GOLD (Graduates of the Last Decade) Affinity Group Volunteers and Committee members needed - contact northjerseygold "AT" ieee.org
- WIE (Women in Engineering) Affinity Group Volunteers and Committee members needed - contact kduncan "AT" ieee.org

Additionally, if interested volunteers would like to get more general information about the Section, including a complete listing of all chapters and committees, visit the North Jersey Section website http://web.njit.edu/~ieeenj/, or contact Dr. Chandra Gupta at c.gupta "AT" ieee.org.

The North Jersey Section Life Member Affinity Group is Being Launched

A Life Members Affinity Group has been formed in the North Jersey Section.

In June 2005 the IEEE Regional Activities Board (RAB) approved the IEEE Life Members Committee as a parent organization of Life Member Affinity Groups. The Life Members Committee has been encouraging all Sections to create Life Member Affinity Group Chapters to enable the many Life Member Grade members of the IEEE retain active IEEE associations, contribute to the social good in their communities, advance their professional interests and create a forum which will enable the Section's Life Grade Members enjoy each other's company.

The Life Member Affinity Groups are a subunit of the IEEE Life Members Committee and can rely on the Committee for assistance when needed.

All Life Grade Members of the North Jersey Section (Life Members, Life Senior Members and Life Fellows), whose membership status is "Active" are automatically members of the North Jersey Section Life Members Affinity Group. As of February 5, 2008 there are 529 Active Life Grade Members in the Section. (There are also 21 Life Grade Members in Arrears and 53 who are listed as Inactive, due to non-response to the Annual Membership Bill.)

It should be noted that the basic Annual IEEE Dues for Life Members is waived, as well as Society Membership in those societies in which the Life Member had been a paying member for at least five (5) years. If a Life Member has been a member of a Society for less than five years, dues are still due until he or she reaches the five year membership, at which time the dues will be waived for future years. In addition, the individual registration fee for Life Members at IEEE sponsored conferences can not exceed the Student Rate.

An active IEEE Member, Senior Member or Fellow becomes a Life Member, Life Senior Member or Life Fellow when their age reaches 65 and the sum of their age and active years in the IEEE totals 100.

The North Jersey Section has one of the largest percentages of Life Members, many of whom are still employed in their desired field. Many more are retired, and the Life Members Affinity Group has as one of its chief goals to create activities to meet the needs of both groups.

Generically, Life Member Affinity Groups get involved in many of the following activities:

- Enjoy each others company
- Provide assistance to IEEE entities holding technical conferences in the area
- Publicize those aspects of the IEEE Financial Advantage Program that meet the needs of Seniors
- Arrange Technical Programs that may not be provided by other IEEE Organizational Units
- Find and volunteer for areas of public service that need competent technical support
- Work with the Section's Membership Development Committee by making presentations to nearby technical firms to show the virtues of IEEE membership and participation as a means of attracting new members
- Join the RE-SEED program to pride assistance to middle and secondary schools in making science and math attractive to students.

Any Life Grade Members of the North Jersey Section who wish to have an active part in the formation and operation of the Life Members Affinity Group can send an email to lm.norjersec "AT" gmail.com, indicating their wishes. Any Life Grade Members (or soon-to-be Life Grade Members) can also send an email to the same address if they have any other questions regarding the Life Members Affinity Group or Life Grade Membership, in general.

Alan H. Stolpen
Chair, North Jersey Section Life Member Affinity Group
lm.norjersec "AT" gmail.com

New IEEE Milestone !

We were recently informed by Robert D. Colburn, Milestone Administrator, IEEE History Center, that the IEEE Executive Committee approved our Section's nomination for a third IEEE Milestone in Electrical Engineering and Computing with the following citation:

'Thomas A. Edison West Orange Laboratories and Factories, 1887'

Thomas Alva Edison, a West Orange resident from 1886 until his death in 1931, established his final and most comprehensive laboratory and factory complex about one-half mile (0.8 km) north of here in 1887. Edison's visionary combination in one organization of basic and applied research, development, and manufacturing became the prototype for industrial enterprises worldwide. Work here resulted in more than half of Edison's 1,093 patents.'

As the National Park Service objected to placing the IEEE Milestone plaque on or near the Edison Laboratory Buildings, the plaque will be mounted on a granite stone and installed near the front side walk area in front of the West Orange Municipal Building, West Orange, NJ. We anticipate holding a dedication ceremony with the West Orange officials in either May or June.

Currently, the Section has dedicated two other Milestones.

The first, dedicated in 1987 was for the first: 'Two-Way Police Radio Communication, 1933.' Part of the citation reads as follows.

'In March 1933, the first two-way AM mobile radio was installed in a patrol car of the Bayonne Police Department. The system was designed by Lieutenant Vincent J. Doyle of the Bayonne Police and radio engineer Frank Gunther. Through the use of a combined transmitter and receiver in the patrol car, the two-way system allowed communication between patrol cars and with the police station.'

The second, dedicated in 1988 at a building in Speedwell Village, now Historic Speedwell and part of the Morris County Park System, is located at 333 Speedwell Avenue, Morristown, NJ, for: 'Demonstration of Practical Telegraphy, 1838.' The building is currently under restoration. Part of the citation reads as follows.

'In this building in January 1838, Samuel F. B. Morse and Alfred Vail first demonstrated publicly crucial elements of their telegraph system, using instruments that Vail had constructed during the previous months. Electrical pulses, transmitted through two miles of wire, caused an electromagnet to ink dots and dashes (grouped to represent letters and words) on a strip of paper. Commercialization began in 1844 when funding became available.'

For further information, see the IEEE History Center list of Milestones worldwide at http://www.ieee.org/web/aboutus/history_center/milestones_world.html or contact Howard Leach, Section Historian at h.leach "AT" ieee.org or (973) 540-1283.

LISAT2008

Fourth Annual IEEE Long Island Systems, Applications and Technology Conference

Friday, May 2, 2008

The Institute for Research & Technology Transfer at Farmingdale State College
State University of New York - Farmingdale, NY

Extended CALL FOR PAPERS, PRESENTATIONS and EXHIBITORS

Last year's successful conference featured contributed papers that were presented in three parallel professional tracks: Systems, Applications, and Technology with a fourth track consisting of Region 1 award-winning graduate student presentations and a 35 booth Exhibit Hall. Technical papers describing research development and application on a broad range of electronic and electrical engineering topics are now solicited for LISAT2008. **Applied research and practitioner submissions will also be considered. No formal paper is required for these submissions.**

The deadline for abstract submissions has been extended to Feb 22.
You will be notified of acceptance by Feb 29.
All papers being included in IEEE Xplore are due by March 24.
All Power Point presentations are due by April 14.

All submissions must include the author's full names, affiliations, mailing addresses, phone numbers, and email address. In addition, a 300-to-500 word abstract, a 1/3-page biography of the presenting author, and an outline of the conference presentation must be submitted. Submissions should be emailed to the LISAT Technical Program Co-Chairmen, Dave Mesecher at **d.mesecher@ieee.org** and Daniel Rogers at **drogers@ieee.org**, as well as Jesse Taub, Technical Program Consultant, at **jjtaub@aol.com** (Please copy David Weiss **daweiss@ieee.org** on all Alternate Energy themed papers.) For detailed instructions on submission, for manuscript and presentation templates, and for more information on the conference, go to the LISAT web site at **http://ewh.ieee.org/conf/lisat/**

Papers and presentations will be accepted based on their originality, content, clarity, and interest to IEEE members. At least one author of *each* paper/presentation must register for the Conference and will be expected to provide a 40-minute PowerPoint presentation at the conference followed by 10 minutes of Q&A. ***The presenting author will be allowed to register at the discounted rate of $75.*** Presented papers will become part of the IEEE Xplore database. Selected papers will receive CEU credit and the Conference Proceedings on CD-ROM will be given to each attendee.

While LISAT welcomes a wide variety of papers in systems, applications and technology, some examples of topics of particular interest are: *Homeland Defense, Alternate Energy Sources, Green Building Technologies, Satellite Communications, Mobile Communications, RF ID Tag Technology, Microwave Technology, Electromagnetic Compatibility, Mobile Ad Hoc Networking, Multi-level Network Security, Sensor Fusion, New Electrical Power Sources, Antenna Systems and Processing, Radio Locationing, Radar Systems and Techniques, Wireless Technologies, Distributed Computing, and Medical Electronics*

*For information on **Exhibiting** at LISAT, please contact: Dr. Fred Kruger at **f.m.kruger@ieee.org***
For all other information** contact LISAT2008 Conference Chair: Dr. Charles Rubenstein at **c.rubenstein@ieee.org** or Conference Co-Chair: Dr. Babak Beheshti at **b.beheshti@ieee.org,** or go to **http://ewh.ieee.org/conf/lisat/

LISAT** is sponsored by the **IEEE Long Island Section** and its Technical Society Chapters and **IEEE Region 1,** in cooperation with the **Institute for Research & Technology Transfer (IRTT)** at **Farmingdale State College (SUNY).

Releases and Approvals: *This conference will be unclassified and attended by both US and non-US persons. It is the author's responsibility to obtain all required company and government releases and approvals prior to making a paper submission. A statement that such releases and approvals have been obtained as well as a completed IEEE copyright form (signed by the submitting author) must accompany the final manuscript of each accepted paper.*

IEEE 2008 SARNOFF SYMPOSIUM
Princeton, New Jersey
April 28 – 30, 2008

2008 Sarnoff Symposium
April 28 – 30, 2008
Princeton, NJ

IEEE

IEEE COMMUNICATIONS SOCIETY
Princeton University
MTT-S ELECTRON DEVICES SOCIETY AP/S

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CALL FOR PAPERS

Since 1978 the IEEE Sarnoff Symposium has been bringing together a tremendous and rich diversity of telecom experts from industry, universities, and government. The popularity of the Sarnoff Symposium, again being held in the historic Nassau Inn located in the heart of downtown Princeton, continues to grow as the premier forum for researchers, engineers, and business executives in the North East drawing an attendance from all over the world. Beside the technical paper presentations the Symposium will include tutorials, student paper poster presentations, executive panels, and exhibitions. The Symposium is soliciting state-of-the-art research papers and tutorial proposals in the following areas of interest:

Communication Systems
- Broadband Networks (LAN/WAN)
- Network Security
- VoIP & QoS (IPv6/Telephony)

Military Communications
- Disruption Tolerant Networks
- Trust, Security, and Privacy
- Power Management Issues

Multimedia Applications & Networking
- Multimedia Communications
- Optical Communications & Networking
- WDM Systems

Communications Theory
- Network Information Theory
- Signal Processing for Communications
- Modulations and Coding Techniques

RF and Microwave Techniques
- Power Amplifiers
- Microwave Devices
- Antenna Systems
- Transceiver Design
- Satellite Communication Systems

Wireless Communications
- WLAN, WiMAX, 3G and 4G Systems
- Multiple Antenna Systems (MIMO/Beamforming)
- Radio Resource Management and
- Interference Management
- Cross Layer Design
- Sensor, Mesh & Ad Hoc Networks
- Performance Analysis of Wireless Systems
- Ultrawideband (UWB) Communications

Prospective authors are encouraged to submit a FULL PAPER for review by December 21, 2007, in PDF format. Only original papers that have not been published or submitted for publication elsewhere will be considered. The submission process is carried through EDAS conference management system (http://edas.info/). The manuscripts must follow the IEEE two-column format with single-spaced, 10-point font in the text. The maximum paper length is of five (5) pages. A sixth page may be accepted after an additional fee. Submission of a regular paper implies that at least one of the authors will have a full registration to the Conference and present the paper upon the acceptance of the submission. All accepted papers (after review by experts in the field) will be presented in oral sessions, will be included in the 2007 IEEE Sarnoff Symposium proceedings, and will be published through IEEEXplore. Student papers should be submitted to the Student Papers Chair [cwang@devry.edu]. Prospective tutorial presenters should contact the Tutorials Chair [mstriki@research.telcordia.com]. For more information please visit the conference web page (see below).

IMPORTANT DATES

Papers Due: ……February 1, 2008
Tutorial Proposals Due:……...February 1, 2008
Student Papers Due:……February 1, 2008
Notification of Tutorials Acceptance:……..February 16, 2008
Notification of Papers Acceptance:……..February 15, 2008
Final Version Due:……March 14, 2008

CONFERENCE SCHEDULE

Tutorials:……..April 28, 2008
Paper Sessions:……April 29, and April 30, 2008
Exhibits:……April 29, 2008

Web page: *www.sarnoffsymposium.org* , **Email :** *sarnoff.symposium@ieee.org*

IEEE AWARDS RECEPTION

North Jersey Section
May 4, 2008
Birchwood Manor, Whippany NJ

A time to relax, unwind and enjoy --
A time to pay tribute to our new Fellows --
A time to honor our Award Winners --
YES it's time for the Annual Section Reception

The Annual Section IEEE Awards Reception will be held at the Birchwood Manor, 111 North Jefferson Road, Whippany again this year. The affair is scheduled for **Sunday, May 4, 2008** from 3 to 6 PM. Tickets are $35.00 each. Spouses and guests are welcome. We are limited to 90 attendees, so please make your reservations early.

Reservations are required by April 24, 2008. Complete the reservation form and return it with your payment. If you would like tickets mailed back to you, please enclose a self-addressed **stamped** envelope. Otherwise, your tickets will be held at the door for you. If any additional information is required concerning the reception, contact Anne Giedlinski at (973) 377-3175.

Use this form for Reception reservations. **ENCLOSE A SELF-ADDRESSED STAMPED ENVELOPE to receive tickets in advance. Reservations are required by April 24, 2008.** Mail reservation request to:

Anne Giedlinski
299 Brooklake Road
Florham Park, NJ 07932

Enclosed is _____ for ____ ticket(s) at $35.00 each (make check payable to **North Jersey Section IEEE**) for:

NAME: _____

ADDRESS: _____

_____

☐ Yes, please send me directions to the Birchwood Manor

NJ Power Engineering Society/Industry Applications Society

Harmonics Seminar

The PES and IAS Chapters will sponsor a technical seminar on the topic of harmonics. The session will be held on Friday, April 25, 2008, at a location in Northern NJ to be determined.

Topics

Power System Harmonics: A Practical Perspective

- ✓ Harmonic symptoms, sources and solutions – an overview of harmonics
- ✓ Testing harmonic solutions – a side-by-side comparison
- ✓ IEEE Std 519 considerations
- ✓ Harmonic resonance and solutions
- ✓ Energy savings and harmonics – what is real
- ✓ Case Studies – harmonic issues alive and well

About the Instructor

The instructor will be Daniel J. Carnovale from Eaton. Dan is the Power Quality Solutions Manager for Eaton's Electrical Group. Dan has developed Eaton's Power Quality Experience Center and Lab where PQ problems are created and mitigated for demonstration and testing purposes. He has developed and teaches CEU certified, technical seminars on Power Systems and Power System Analysis and he has conducted several hundred Power Quality site investigations for commercial, industrial and utility power systems: evaluating PQ issues and applying solutions.

Prior to Eaton, Dan worked for Westinghouse Engineering Services and ABB Power T&D where he performed Power Quality field investigations and electrical distribution system analysis.

Dan received his BS Degree in Electrical Engineering from Gannon University in Erie, PA, his MS Degree in Power Systems from Rensselaer Polytechnic University in Troy, NY and an MBA from Robert Morris University in Pittsburgh, PA. He is a registered Professional Engineer in the states of Pennsylvania, California and Alaska, a Certified Energy Manager (CEM) and a Senior Member of IEEE. He has published many technical papers and presented more than 100 seminars on Power Quality and harmonics.

The registration fee for this seminar prior to April 11th will be $150 for non-IEEE members, $100 for IEEE Members, $75 for GOLD Graduates (last 1-10 years) and $25 for students with valid ID. The fee will be waived for IEEE Life Member Grades with verification at the seminar. Registrations after April 11th must include an additional late fee of $25. The seminar fee includes lunch, refreshments and handouts. Non-members joining IEEE within 30 days of the seminar will be rebated 50% of the IEEE registration charge.

If desired, IEEE Continuing Education Units will be offered for this course - a small fee of $25 will be required for processing. A total of 0.4 CEUs will be offered. Please indicate if desired below.

Time: 9:00 AM to 2:00 PM (lunch is included), Friday, April 25, 2008.
Place: TBD
Directions:
Information: Ronald W. Quade, PE, (732) 205-2614 or rwquade "AT" ieee.org

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Registration: Harmonics Seminar 4/25/2008

Register via US mail to:
Ronald W. Quade, PE
Eaton Electrical
379 Thornall St, 8th Floor
Edison, NJ 08837

Name _____

Address _____

Phone_____ Email _____

IEEE #_____ Student @_____ Non IEEE_____ Life Member_____

Continuing Education Units: _____Yes $25 _____No
If CEUs are chosen, please include a $25 processing fee
Payment Enclosed $_____ Add $25 late registration after April 11, 2008

Make checks payable to North Jersey Section IEEE (Credit Cards cannot be processed at this time).

IEEE North Jersey Section Course
Project Management

Tuesday Evening, March 11, 2008 through May 6, 2008
Eight weekly classes (March 11, 25, April 1, 8, 15, 22, 29, May 6, 2008
USPS, NJ International Bulk Mail Center, 80 County Road, Jersey City, NJ 07097
(Checks should not be mailed to this address)

IEEE North Jersey Section thanks USPS, NJIBMC for sponsoring this course at its site

The North Jersey Section IEEE is offering an evening course entitled "Project Management". Dice.com lists 5500+ Project related jobs in the New York tri-state area daily! This course will help you to break down a master project into manageable tasks, pinpoint possible solutions, and provide information to keep the project under control. Using Microsoft Project software, you will learn to accomplish various project plans. In addition, it will greatly enhance your business, communications and interpersonal skills.

You will receive the IEEE certificate of completion when you finish the course. You may wish to take two Certification exams, one in *Project Management* administered by Project Management Institute and the other in *IT Project+* by CompTIA Inc from the knowledge you learned in this course. (This is *not an exclusive PMP-PMI examination prep course.* No PDUs are issued for PMP eligibility. CEU credits would be given by IEEE)

Instructor: **Donald Hsu, Ph.D.,** has been a corporate manager for 11 years and is an experienced trainer. Since 2000, he has trained 650 people in *IT Project+, MS Project 2007, Project Management and Global E-Commerce courses* in eight organizations.

TOPICS

1. Explain the need for a project manager in different industries
2. Define SOW, PERT, GANTT, CPM, and Scope of the project
3. Identify the team members, resources and plan for the strategy
4. Calculate schedule, budget variances, and monitor project progress
5. Manage changes, estimates, and communications
6. Employ the use of MS Project 2007, MS Visio 2007 and related software
7. Set a baseline, import tasks from MS Excel, export Project files to MS Word
8. Create and modify custom reports, templates and combination views
9. Approve updates and conclude a project plan
10. Market global E-commerce projects
11. Present final projects from the participants

WHERE: NJ International Bulk Mail Center, 80 County Rd, Jersey City, NJ. (Checks **should not** be mailed to this address)
WHEN: 8 Tuesdays, March 11, 25, April 1, 8, 15, 22, 29, May 6, 2008, from 6:30 to 9:00 PM.
COST: IEEE (& affiliate) members $430; Non-IEEE members $480.
CONTACT: Donald Hsu: yanyou "AT" hotmail.com

REGISTRATION: Project Management

Please mail the registration form with the check **(Checks payable to "North Jersey Section IEEE") to:**
Donald Hsu, Chair Education Committee, IEEE North Jersey Section, P. O. Box 2093, Fort Lee, NJ 07024

Name: _____ Email address _____

☐ Non-member

☐ IEEE Member Member #:_____ Member of _____ technical society

Employer:_____

Employer Address:_____

_____

Home Address:_____

_____

Business (day) telephone #:_____ Home telephone #:_____

Please enclose required fee payable to: **North Jersey Section IEEE**

As soon as a completed registration form and the payment are received, you are officially registered for this course. Registration status will be emailed to you for confirmation.

☐ I wish to receive the IEEE Completion Certificate Signature:_____