

# Vol.59, No. 4

# **APRIL 2012**

#### **Calendar of Events:**

• Apr 04, 1:00PM-2:00PM: IEEE IMS, WIE and IEEE Student Branch at FDU: Error! Reference source not found.: Alan Wolke, Applications Engineer, Tektronix

Location: FDU, Muscarelle Building Room 205, 1000 River Road, Teaneck, NJ 07666, Contact: Russell C. Pepe (201-960-6796), rcpepe@ieee.org; IEEE.FDU@gmail.com Read more...

• Apr 04, 6:00PM-8:00PM: IEEE IMS, WIE and IEEE Student Branch at FDU: Error! Reference source not found.: Alan Wolke, Applications Engineer, Tektronix

Location: FDU, Muscarelle Building Room 205, 1000 River Road, Teaneck, NJ 07666, Contact: Russell C. Pepe (201-960-6796), rcpepe@ieee.org; IEEE.FDU@gmail.com Read more...

- Apr 04, 6:00PM-8:45PM IEEE North Jersey Section EXCOM meeting Location: Activity Room of the Clifton Public Library, Allwood Branch, 44 Lyall Road, Clifton, NJ 07012, (973 471 0555), Getting to Clifton Public Library Contact: Naresh Chand (Cell: 908 723 7001); (nchand@ieee.org), Adriaan van Wijngaarden (avw@ieee.org). Read More...
- Apr 09, 11:00AM-12:05PM IEEE SMC Chapter presents: Seminar on: Automatic Construction and Evolution of Software Process Problem-solving Resource Space - Dr. Jin Liu, Associate Professor of State Key Laboratory of Software Engineering, Location: NJIT, ECEC 202, Intersection between Warren & Summit Streets, Newark, NJ 07102, Getting to NJIT & Parking Information Contact: (973-596-6282) Read more...
- Apr 09, 6:45PM-8:00PM IEEE Education Committee presents Seminar on: 4G Is Here, What's next? -- Challenges in Advanced LTE and Performance Optimization Byron Chen

Location: NJIT, Kupfrian Hall, Room Number: 118, 323 MLK Blvd, NJ 07102, Getting to NJIT & Parking Information Contact: Mengchu Zhou, (zhou@njit.edu), (973 596 6282) Read More...

• Apr 11, 6:30PM-9:00PM PACE presents: ENGINEERS MEET - Stuff You Don't Learn in Engineering School– Carl Selinger, Manager at the PANYNJ

Location: Clifton Memorial Library, 292 Piaget Ave., Clifton, NJ 07011 Contact: Paul Ward, (973 790-1625), peward@ieee.org; Richard F. Tax, (201-664-6954). rtax@verizon.net Read More...

- Apr 16, 6:30PM-7:30PM IEEE TMC chapter: Stability Radius Optimization and Nonlinear Control of a Segway Style Robot:- Sam Nazari, Draper Labs Location: NJIT, ECEC 202, Intersection between Warren & Summit Streets, Newark, NJ 07102, Getting to NJIT & Parking Information Contact: Dr. David Haessig (973 305 2583); (973) 934 9659, david.haessig@baesystems.com Read More...
- Apr 18, 6:00PM-9:00PM MTT-S/AP & AES Chapters present: On taking a more unified design approach for mixer RFIC's- Prof. Carlos Saavedra of Department of Electrical and Computer Engineering, Queen's University, Kingston, Ontario, Canada
  Location: NJIT, ECEC 202, Intersection between Warren & Summit Streets, Newark, NJ 07102 Getting to NJIT & Parking Information
  Contact: Dr. Ajay Kumar Poddar (201)-560-3806 (Email: akpoddar@synergymwave.com) Read More...
- Apr 23, 5:00PM-6:30PM IEEE COMSOC: Green Wireless Networks George Rittenhouse, Alcatel-Lucent Location: NJIT, ECEC 202, Intersection between Warren & Summit Streets, Newark, NJ 07102, Getting to NJIT & Parking Information Contact: Nirwan Ansari (973)596-3670; Read More...
- Apr 25, 6:30PM-8:30PM IEEE CNNJ Electric Vehicles: Past, Present and Future John Santini, VP of Engineering at TDI Power. Location: Morris County Library, 30 East Hanover Avenue, Whippany, NJ, Getting to Morris County Library Contact: Robert Walker, 973-728-0344, or Visit our website: www.TechnologyOnTap.org
- Apr 25, 11:00AM-12:05PM IEEE SMC Chapter presents: Seminar on Non-Shortest Path Routing with Convex Optimization Dr. Dahai Xu Research staff in AT&T Labs
   Location: NJIT, ECEC-202, 161 Warren Street, Newark, NJ 07102 Getting to NJIT & Parking Information
   Contact: Prof. Zhou (973-596-6282) Read More...
- Apr 25, 4:00PM-6:00PM IEEE North Jersey Section-IMS & MTT present: When Worlds Collide- Why Microwave and High Speed Digital Designers Should Be Best Friends – Dr. Eric Bogatin, Signal Integrity Evangelist with Bogatin Enterprises Location: NJIT, ECEC-202, 161 Warren Street, Newark, NJ 07102 Getting to NJIT & Parking Information Contact: Russell C. Pepe 201-960-6796 (rcpepe@ieee.org) Read More...
- May 02, 6:00PM-8:45PM IEEE North Jersey Section EXCOM meeting Location: Allwood Branch, Activity Room, 44 Lyall Road, Clifton, NJ 07012, Getting to Clifton Public Library Contact: Naresh Chand (908 723 7001); (nchand@ieee.org), Adriaan van Wijngaarden (avw@ieee.org) Library: (973) 471 0555),
- May 06, 3:00PM-6:00PM IEEE North Jersey Section: Awards Banquet 2012 Location: Birchwood Manor, Whippany, NJ Contact: Russell Pepe, (201-960-6796), rcpepe@ieee.org Read More...
- Congratulations to the winners of the local student paper competition!
- Welcome! IEEE North Jersey Section New Members
- Memorial Tribute to Mr. Sever Anghel





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

Prior registration is encouraged and appreciated. You don't have to be an IEEE member to attend any event. For up to date information, visit our website: www.ieee.org/go/njsection

#### **Meeting Announcements:**

#### April 04, 2012

# **IEEE IMS, WIE and IEEE Student Branch at FDU:** Error! Reference source not found.

**Speaker:** Mr. Wolke, Applications Engineer for Tektronix

**Abstract:** This talk will have demonstrations and hands on examples of capturing and seeing (and hearing, in some cases) wireless signals using RF (radio frequency) test equipment.

**Biography:** Mr. Wolke is an Applications Engineer for Tektronix, providing engineering support and technical training for advanced electronic test equipment used by engineers around the world. Alan's interest in electronics began while he was in high school, where he worked part time in a television repair shop and also earned his first hamradio license. He earned a BSEE degree from New Jersey Institute of Technology in 1985, and began working as a design engineer developing circuits used in fiber optic networks. He was awarded a US Patent which lead to a new position designing circuits for very high speed telecommunications circuits. As a Technical Manager he was responsible for testing integrated circuits that are used inside computer hard disk drives.

**Location**: FDU, Muscarelle Building Room 205, 1000 River Road, Teaneck, NJ 07666

Getting to FDU

**Time:** 1:00 PM – 2:00 PM

For Updates and Registration: Click here

#### **IEEE-IMS presents this talk also at:**

Location: NJIT, ECEC 202, Intersection between Warren & Summit Streets, Newark, NJ 07102 Getting to NJIT

**Time:** 6:00 PM – 8:00 PM

Contact: Russell C. Pepe (201-960-6796); (rcpepe@ieee.org);

For Updates and Registration: Click here

Vol. 59, No. 4

Back to Calendar of Events:

#### April 04, 2012

# IEEE North Jersey Section EXCOM meeting

**Agenda:** This executive committee (EXCOM) meeting of the IEEE North Jersey Section will be held at Activity Room of the Clifton Public Library (Allwood Branch, 44 Lyall Road, Clifton, NJ 07012),

The meeting agenda typically includes reports from the Secretary and Treasurer, reports from the Chapter and Affinity Group Chairs and Representatives, Committee Chairs, news related to the IEEE and the North Jersey Section, planning and new initiatives.

There will be a get-together with a buffet starting at 6 pm.

The meeting starts at 7 pm EST and typically ends at 8:45 pm. The meeting is meant to discuss and coordinate the section's activities and new initiatives.

Everyone is welcome to attend this meeting.

Please register in advance for this meeting using vTools to provide the meeting organizers an accurate head count. You can change/cancel the registration if your plans change.

**Location:** Clifton Public Library - Allwood Branch Activity Room, 44 Lyall Road, Clifton, NJ 07012

Getting to Clifton Public Library

**Time:** 6:00 PM – 8:45 PM

**Contact:** Naresh Chand (908 723 7001); (nchand@ieee.org),

Adriaan van Wijngaarden (avw@ieee.org)

Library: (973) 471 0555),

For Updates and Registration: Click here Back to Calendar of Events:

#### April 09, 2012





# IEEE SMC Chapter presents: Seminar on: Automatic Construction and Evolution of Software Process Problemsolving Resource Space

**Speaker:** Dr. Jin Liu, Associate Professor of State Key Laboratory of Software Engineering,

**Abstract:** Automatic Construction and Evolution of Software Process Problem-solving Resource Space

The automatic construction of networked software and its ability to adapt to dynamic environments are important for cloud services that depend upon these capabilities. This work provides a cloud service that browses the stacks of problem solution resources produced in the software process (SP for short) by organizing them into a structured Resource Space according to domain topics. Efforts are made to provide the cloud service with the ability of automatic construction of the SP problem-solving Resource Space, including extracting domain topics from document resources with the TDDF algorithm, transforming the topics into several categories to form the logic Resource Space, and deploying the Resource Space in a Peer-to-Peer network. The work also expects to achieve the online service evolution such as adjusting the resource pool and refining the Resource Space Model by continuously understanding and adapting to its surroundings. Empirical cases are finally presented. This investigation promotes the adaptability of software services to their changing environment.

Biography: Dr. Jin Liu is presently an Associate Professor of State Key Laboratory of Software Engineering, Computer School at Wuhan University, China. Since last March he has performed the research under the guidance of Prof. Mengchu Zhou, in the Department of Electrical and Computer Engineering of New Jersey Institute of Technology. He received his Ph. D. degree from the State Key Lab of Software Engineering, Wuhan University, Wuhan, China, in 2005. He received his M.S. and B.S. degrees from Computer School at Wuhan University in 2002 and in 1999, respectively. He joined Wuhan University since 2004 as a faculty member. From 2005 to 2007, he was a Post-doc at China Knowledge Grid Research Group in Institute of Computing Technology, Chinese Academy of Science, Beijing, China. His

current research interests include software modeling, networked software, and knowledge processing.

**Location:** NJIT, ECEC 202, Intersection between Warren & Summit Streets, Newark, NJ 07102 Getting to NJIT & Parking Information

**Time:** 11:00 PM – 12:05 PM

**Contact:** (973-596-6282)

For Updates and Registration: Click here Back to Calendar of Events:

# April 09, 2012

### IEEE Education Committee presents Seminar on: 4G Is Here, What's next? --Challenges in Advanced LTE and Performance Optimization

Speaker: Byron Chen

**Abstract:** 4G Is here. What's next? -- Challenges in Advanced LTE and Performance Optimization

With large scale of LTE deployment of VZW and AT&T, followed by Sprint PCS, 4G networks are a reality in North America. What's next? The answer is Advanced LTE with DL/UL peak throughput enhanced from 300/75 Mbps to 3000/1500 Mbps, which encompasses much more complicated technologies. In parallel, the population of smart phone users jumps to nearly 50% of all subscribers in this country, which imposes a huge pressure on network performance. To face the challenges, the traditional network centric performance analysis has been gradually moved to user centric performance analysis, that is, integrate both user data with network data for performance monitoring, analysis and optimization.

**Biography:** Dr. Byron Chen was awarded the 2010 NJIT Excellence in Teaching Award as an Adjunct Professor. The class in wireless networks that he has taught at NJIT since 2002 is informed by his ongoing research and development work at Alcatel-Lucent.

Graduated with Ph.D. in Electrical and Computer Engineering from The Pennsylvania State University in 1993, Dr. Byron Chen has been a member of technical staff at Alcatel-Lucent since



Being a member of Alcatel-Lucent 1997. Technology Academy and with more than 12 patents to his credit, Dr. Chen's research and development activities cover multiple wireless technologies CDMA/EVDO, including WCDMA/HSPA and LTE. He is currently a lead system engineer in the group of RF Tools and Service Delivery, leading the effort of developing methods and tools that can integrate mobile data with network data for effective LTE network deployment, performance monitoring and diagnosis. Before joining the Wireless Technology Lab at Lucent Technologies, Dr. Chen held senior positions at Orincon Corp which was well known for its research oriented business in defense industry and later became a division of Lockheed-Martin in 2003.

Location: NJIT, Kupfrian Hall, Room Number: 118 323 MLK Blvd, NJ 07102 Getting to NJIT & Parking Information Time: 06:45PM to 08:00PM Contact: Mengchu Zhou, (zhou@njit.edu) (973 596 6282)

For Updates and Registration: Click here Back to Calendar of Events:

# April 11, 2012

# PACE presents: ENGINEERS MEET -Stuff You Don't Learn in Engineering School

Speaker: Carl Selinger, Manager at the PANYNJ

**Abstract:** Come join us and review the following skills: Communicating Effectively - Working with clients and the public - Manage Time and Work -Finding Time to Fulfill Responsibilities and Relax-Dealing with difficult people? (We all have this problem). Learn Methods that Work, Write, Speak, Listen – Build Confidence! Connecting with Upper Management, Need for Proper Management and Leadership Skills

This development program will provide straightforward, practical skills for young engineers and business professionals, alike, discussing real world problems and effective solutions. It emphasizes decision-making, setting priorities and managing time, negotiating, teamwork as well as improving writing, speaking and listening skills – for better productivity and advancement. Quickly apply these skills learned to communicate effectively and succeed in the real world.

Biography: Carl Selinger supports aviation and transportation organizations with business strategy and new technologies application. While serving as Manager at the PANYNJ, Carl developed business, concessions and technology initiatives to improve services and increase revenues at Kennedy, LaGuardia and Newark Liberty airports. Carl holds degrees in civil and transportation engineering from Cooper Union, Yale University, and Polytechnic University. He is currently an active participant in American Society of Civil Engineers (ASCE); Institute of Transportation Engineers (ITE); American Society for Engineering Education (ASEE); and Women's Transportation Seminar (WTS). He was the first male WTS member in the New York chapter. Under the WTS mentorship program, Carl has mentored young professionals for over 10 years with honors from the Greater NY Chapter as "1998 Member of the Year."

Carl has extensive college teaching experience as an Adjunct Professor of Civil Engineering at The Cooper Union where his education platform, over 35 years, has familiarized students with urban transportation planning.

He is a faculty advisor to Cooper Union's chapter of Tau Beta Pi (the national engineering honorary society), which elected him as "Eminent Engineer." In addition, Carl has functioned as a Past President of the Cooper Union Alumni Association and was Cooper Union's "1993 Alumnus of the Year." He has taught graduate-level aviation and transportation planning courses at SUNY Maritime College, Pace University, New Jersey Institute of Technology and City University of New York (York College and City College).

**Location:** Clifton Memorial Library, 292 Piaget Ave., Clifton, NJ 07011

Time: 06:30PM to 09:00PM

**Contact:** Paul Ward, (973 790-1625), peward@ieee.org;

Richard F. Tax, (201-664-6954). rtax@verizon.net





#### No Admission Charge.

Welcome: Members and students from other IEEE Sections, professional societies and engineering disciplines are always welcome.

For Updates and Registration: Click here Back to Calendar of Events:

#### April 16, 2012

# IEEE TMC Chapter presents: Stability Radius Optimization and Nonlinear Control of a Segway Style Robot

Speaker: Sam Nazari, Draper Labs

Abstract: Analysis and control of nonlinear systems that can be brought into a state dependent representation known as extended linearization is a flourishing area in robust control. Under this formulation, conventional linear analysis techniques may be adapted to study the stability, optimality, and robustness properties of nonlinear systems, such as the Segway Style Robot. In real world applications, these systems are subject to parametric uncertainty and estimating the radius of stability becomes difficult since the closed-loop system equations are not available explicitly. A method for obtaining the upper bound for the radius of stability in this class of systems will be presented and illustrated on the Segway Style robot. It will be shown that the stability radius around a suitable domain for the robot can be obtained by computing the largest singular value of an overvalued matrix with special properties. Additionally, a property of extended linearization is that it relies on a nonunique factorization of the system dynamics to bring the nonlinear system into a pseudo-linear form referred to as the State Dependent Coefficient (SDC) parameterization. Under system uncertainty, each SDC parameterization for the Segway Style robot will produce its own radius of stability in a region of interest in the state space. A method for obtaining the SDC parameterization resulting in the maximum radius of stability for the original nonlinear system in the region of interest will be presented and demonstrated on the Segway Style robot. It will be shown that the problem of finding

the maximum radius of stability from a hyperplane of SDC parameterizations can be reduced to constrained minimization of the spectral norm of a comparison system. In order to navigate the Segway Style robot over a seesaw obstacle, it is necessary to accurately control the robots turning and angular velocity while wheel rate maximizing simultaneously the controller bandwidth. Due to sensor limitations, the robots wheel angular rate is not directly available. Conventional robot models use a finite differencing operation in order to obtain the necessary rates. This leads to noisy signals that couple into the control loop causing degraded controller bandwidth and undesirable performance. It will be shown that a simple Kalman Filter can be used to alleviate this problem and to extend the controllers bandwidth. To surmount the seesaw obstacle, ultimately it is necessary to limit the rate and acceleration of the robots wheels. A method utilizing spectral windows as basis, functions will be presented to accomplish this task.

**Biography:** Sam Nazari is currently a Senior Member of Technical Staff at the Charles Stark Draper Laboratory in Cambridge MA. Prior to joining Draper Laboratories, he was an Application Engineer for the MathWorks and a Systems Engineer for various defense contractors. Sam received his MSEE in Control Systems and Signal Processing from the department of Electrical and Computer Engineering at Northeastern University in 2011 and his BSEE from the New Jersey Institute of Technology in 2003. Sam is currently pursuing a PhD in Control Systems and Signal Processing from Northeastern University.

Location: NJIT, ECE 202, 161 Warren Street, Newark, NJ 07102,

Getting to NJIT & Parking Information

Time: 6:30 to 7:30 PM

Contact: Dr. David Haessig (973 305 2583)

(973) 934 9659, david.haessig@baesystems.com No Admission Charge.

Pizza will be available to all attendees at 6:00 PM For Updates and Registration: Click here Back to Calendar of Events:



# April 18, 2012

### MTT-S/AP & AES Chapters present:

# On taking a more unified design approach for mixer RFIC's

**Speaker:** Prof. Carlos Saavedra of Department of Electrical and Computer Engineering, Queen's University, Kingston, Ontario, Canada

**Abstract:** This talk presents methodology for the design, development and fabrication of RFIC mixer circuits for RF & Microwave communication systems.

The reigning design paradigm for microwave transceivers is to divide and conquer: the engineer optimizes the individual designs and first components (e.g. the amplifiers, the mixers, the oscillators) and then he or she interconnects those components to create the transceiver. Undoubtedly, this design paradigm has been enormously powerful. Nevertheless, there are important benefits to be gained by adopting a more integrated design approach. More specifically, the concept is to merge some of the blocks of the transceiver and to design those blocks as a single unit. Stated another way, the idea is to divide less and conquer more at the component level. Some of the benefits of this latter design approach can include reduced chip area, reduced power consumption, or an improvement in a specific performance metric. One of the central components of a communications transceiver is the frequency converter, or mixer, because it is responsible for upconverting and downconverting the information-bearing signal. When a mixer is combined with the local oscillator circuit, for example, the result is a new circuit known as a selfoscillating mixer (SOM). This talk will focus on innovative ways to merge the mixer with other components that typically surround the mixer in a transceiver. Three CMOS mixer RFIC designs will be described together with measured results. Those circuits are: a mixer-LNA with an average DSB noise figure of 3.9 dB, a dual-band SOM capable of operating at C-band and X-band, and a 12-GHz variable conversion gain mixer.

**Biography:** Carlos Saavedra obtained the Ph.D. degree from Cornell University in 1998. From 1998 to 2000 he was a Senior Microwave Engineer at

Millitech Corporation, South Deerfield, Massachusetts. Since the year 2000 he has been with Queen's University in Canada. He is the Chair of the MTT-S Technical Coordinating Committee 22 on Signal Generation and frequency Conversion, he is a member of the Steering Committee of the 2012 IEEE International Microwave Symposium and he served on the Technical Program Committee of the IEEE RFIC Symposium from 2008-2011.

**Location:** NJIT, ECEC-202, 161 Warren Street Newark, NJ 07102

Getting to NJIT & Parking Information

Time: 06:00PM to 09:00PM

6:00PM: Networking

6:30PM: Buffet Dinner

7:00PM: Talk

Free dinner will be served at 6:30PM. All are welcome. You don't have to be IEEE member to attend the talk.

**Contact:** Dr. Ajay Kumar Poddar (201)-560-3806 (Email: akpoddar@synergymwave.com)

For Updates and Registration: Click here

Back to Calendar of Events:

### April 23, 2012

# **IEEE COMSOC presents:**

### **Green Wireless Networks**

Speaker: George Rittenhouse, Alcatel-Lucent

Abstract: Approximate Services in Internet of Things: With the expected explosion of the communication traffic driven by applications, devices and machines all being connected, the total Internet traffic in the next decade is expected to grow to a level that is 30 to 100 times that of 2010. resulting The power required by the communications infrastructure will increase exponentially and lead to unsustainable power consumption levels. Despite anticipated advances in hardware, software and architectures, the overall energy required will still increase manifold beyond the 2010 levels. Therefore a clear need for new energy-efficient technologies arises to enable and build a long-term sustainable communication



infrastructure. In this presentation, we provide the motivation and a brief overview of the GreenTouchTM consortium, a global research consortium of industry, academia and research institutes dedicated to increasing network energy efficiency in 2020 by a factor 1000 relative to corresponding levels in 2010. We then review some of the challenges and opportunities for improved energy efficiency in future next-generation wireless networks and some of the promising research directions, including novel network architectures, antenna technologies and intelligent network and radio resource management. We conclude the presentation with a description of some specific research projects, ongoing activities and the initial results that have already been obtained.

**Biography:** Gee (George) Rittenhouse is the Chief Operating Officer of Alcatel-Lucent's Software, Services, and Solutions Group (S3G). The S3G organization works with global operators to transform their business by creating new revenue generating opportunities in areas ranging from Cloud to applications such as mobile commerce and digital music as well as solutions that focus on customer experience. These solutions are backed by a team of services experts who deliver everything from concept planning through full-scale operations support to meet complex customer needs.

Before his current role in the S3G organization, Gee was Vice President of Bell Labs Research, overseeing all Alcatel-Lucent research in physics, computer science, mathematics, optics, access, networking, and applications. Prior to leading research he was Vice President of Bell Labs' Technology Integration Group, with the primary mission of taking Bell Labs research innovations and driving them into Alcatel-Lucent's products and services. Before that Gee was Vice President, Bell Labs Wireless Research.

He received his Bachelor of Science degree in physics from the University of California, Los Angeles in 1986. Then in 1993 he received his Ph.D. degree in Electrical Engineering and Computer Science from the Massachusetts Institute of Technology. In 2002 he received the Bell Labs Fellow Award. He is currently the Chairman of the Board of Green Touch, a non-profit pre-competitive research consortium focused on dramatic reductions in network energy requirements. He also has numerous publications and patents in the areas of communications and circuits.

**Location:** NJIT, ECEC-202, 161 Warren Street Newark, NJ 07102

Getting to NJIT & Parking Information

Time: 05:00PM to 06:30PM

**Contact:** Nirwan Ansari (973)596-3670 Check http://web.njit.edu/~ieeenj/comm.html For Updates and Registration: Click here

### April 25, 2012

#### **IEEE CNNJ PRESENTS:**

# **Electric Vehicles: Past, Present and Future**

**Speaker:** John Santini, VP of Engineering at TDI Power.

Abstract: Electric Vehicles: Past, Present and Future: Few engineers realize that the first automobiles to become popular were actually electric. Electric vehicles remained popular until Kettering invented the electric starter for the gasoline engine, which solved many of the negatives of gasoline engines. Now, with gasoline prices rising again, EV's are seeing renewed interest. A number of major manufacturers are introducing EV's to the mass market, as well as a number of smaller companies. Lithium ion batteries seem to be ready for prime time, with 10-year operational life anticipated. Electrical infrastructure for charging remains a major obstacle. Will we have J1772 compliant charging stations at every Starbucks any time soon? When will EV's outnumber conventional gasoline powered cars? Or will Hybrids be the ultimate answer?

Join John Santini from TDI Power to see what's going on in this old/new industry, and get a glimpse of some of the latest enabling technology.

**Biography:** John's first job after graduating from Cornell with a BSEE was working for AIL (now Telephonics), assigned to the Space Shuttle Landing System. After 3 years, he left to start his own power supply company, starting with the motor



controller for an electric VW Rabbit conversion, which was used in several DOE programs. In the late 1980's, he performed a study for DARPA concerning the feasibility of fuel cell powered military vehicles, and also designed and built prototype DC/DC converters for Ford's EV program.

At TDI, John is responsible for supervising the Hackettstown Engineering team. He has also been responsible for the hardware architecture for various commercial and military projects. He holds 3 patents and commutes to work in a home-built electric vehicle with a regenerative AC drive. Use this link to see his newest creation:

http://rdwalker.com/cnnnj/meetings/JohnSantini\_E V.jpg .

John may be reached via john.santini@tdipower.com.

#### **ABOUT TDI:**

Founded in 1960, TDI Power (www.tdipower.com) is located in Hackettstown, NJ. It specializes in power electronics of all kinds, including Medical, Industrial, Commercial Military and Aerospace. More recently, it is becoming increasingly involved in high power automotive applications.

#### **ABOUT THE 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 ARE WELCOME!**

#### No fees or registration required.

**Location:** Morris County Library, 30 East Hanover Avenue, Whippany, NJ

Directions to Library: Getting to Morris County Library

#### Time: 6:30 PM - 8:30 PM

**Contact:** Robert Walker, 973-728-0344, or Visit our website: www.TechnologyOnTap.org.

#### April 25, 2012

# IEEE SMC Chapter presents: Seminar on Non-Shortest Path Routing with Convex Optimization

#### Speaker: Dr. Dahai Xu

Abstract: The classical multi-commodity problem is to minimize a convex objective function of link utilizations for a given set of traffic demands. An open problem was whether and how to realize its optimal solution using a destination-based, hop-byhop forwarding, where each node independently determines traffic splitting across its outgoing links based on a global view of link weights. We proved that any optimal multi-commodity flow can be realized with a new link-state routing protocol, PEFT, using uneven traffic splitting. PEFT was derived from a new convex optimization problem, Network Entropy Maximization (NEM), which involves an infinite number of variables. In this talk, we present the compact and equivalent formulation of the NEM problem. But the question left is if NEM is the ONLY additional objective function to realize optimal flow with link-state routing.

**Biography:** Dr. Dahai Xu is currently a research staff in AT&T Labs. After receiving his Ph.D. degree in Computer Science and Engineering from University at Buffalo in 2005, he spent two years as a postdoctoral research associate in Department of Electrical Engineering at Princeton University. His research interests include Internet design, control and management; Algorithm design and fast implementation; Large-scale non-linear network optimization; Secure communication in wireless ad hoc networks. More information can be found at http://www.research.att.com/~dahaixu/.

#### Location: NJIT, ECEC-202, 161 Warren Street

#### Newark, NJ 07102

#### Getting to NJIT & Parking Information

**Time:** 11:00AM to 12:05PM

Members and non-members all are welcome.

Contact: Prof. Zhou (973-596-6282)

For Updates and Registration: Click here Back to Calendar of Events:



# April 25, 2012

# IEEE North Jersey Section-IMS & MTT present: When Worlds Collide- Why Microwave and High Speed Digital Designers Should Be Best Friends

**Speaker**: Dr. Eric Bogatin, Signal Integrity Evangelist with Bogatin Enterprises

**Abstract:** Driven by telecom applications, many digital products have data rates in excess of 10 Gbps and signal bandwidths higher than 20 GHz. This is the regime traditionally occupied exclusively by microwave engineers. As these two worlds collide in leading edge applications, it may be a boon to both engineering worlds. In this brief talk, we will show some of the advantages of those engineers who are bilingual and can speak in both frequency domain and time domain, as the combination will often enable you to get to the right answer faster.

**Biography:** Dr. Eric Bogatin is currently a Signal Integrity Evangelist with Bogatin Enterprises, where he teaches advanced signal integrity classes world-wide. He received his BS degree in physics from MIT in 1976, and MS and PhD degrees in physics from the University of Arizona in Tucson in 1980. He has held senior engineering and management positions at Bell Labs, Raychem, Sun Microsystems, Ansoft, and Interconnect Devices. Eric has written six books on signal integrity and interconnects design and over 300 papers. Many of these are posted for free download at www.beTheSignal.com. His latest book "Signal and Power Integrity-Simplified" was published in 2009 bv Prentice Hall. Read his blog at www.beTheSignal.com/blog and follow him on twitter @beTheSignal.

**Location:** NJIT, ECEC-202, 161 Warren Street Newark, NJ 07102

Getting to NJIT & Parking Information

Time: 04:00PM to 06:00PM

Members and non-members all are welcome.

Free buffet will be provided at 4:00 PM.

**Contact:** Russell C. Pepe 201-960-6796 rcpepe@ieee.org

For Updates and Registration: Click here

Vol. 59, No. 4

Back to Calendar of Events:

#### May 02, 2012

# IEEE North Jersey Section EXCOM meeting

**Agenda:** This executive committee (EXCOM) meeting of the IEEE North Jersey Section will be held in the Activity Room of the Clifton Public Library

There will be a get-together with a buffet starting at 6 pm.

The meeting starts at 7 pm EST and typically ends at 8:45 pm, when the library closes. The meeting is meant to discuss and coordinate the section's activities and new initiatives.

Everyone is welcome to attend this meeting.

Please register in advance for this meeting using vTOOLS to provide the meeting organizers an accurate head count. You can change/cancel the registration if your plans change.

For more information, please contact the Section Chair (Naresh Chand, nchand@ieee.org) and/or the Section Secretary (Adriaan van Wijngaarden, avw@ieee.org).

Location: Allwood Branch, Activity Room,

44 Lyall Road, Clifton, NJ 07012,

Getting to Clifton Public Library

**Time:** 6:00 PM – 8:45 PM

**Contact:** Naresh Chand (908 723 7001); (nchand@ieee.org),

Adriaan van Wijngaarden (avw@ieee.org) Library: (973) 471 0555),

For Updates and Registration: Click here Back to Calendar of Events:

#### May 6, 2012

# IEEE North Jersey Section Awards Banquet 2012

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 6, 2012 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 27, 2012. 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.

-----

\_\_\_\_\_

Use this form for Reception reservations. ENCLOSE A SELF-ADDRESSED STAMPED ENVELOPE to receive tickets in advance.

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

Location: Birchwood Manor, Whippany, NJ

**Time:** 3:00 PM – 6:00 PM

**Contact:** Russell Pepe, (201-960-6796), rcpepe@ieee.org 43 Rambling Drive, Scotch Plains, NJ 07076 If any additional information is required concerning the reception, contact Russell Pepe. Reservations are required by April 27, 2012. Mail reservation request to: For Updates and Registration: Click here Back to Calendar of Events:

# Congratulations to the winners of the local student paper competition!

The annual local student paper competition is the annual event where students branch members present projects they have been working on. The competition serves two purposes, prepare students to present at the Region 1 student competition and also work on public presentation skills.

Listed below are the winners *Undergraduate winners:* 1st Place: Christopher Lau 2nd Place: Elimine Botes 3rd Place: Kushan Costa 3rd Place: Marvin Allen *Graduate winners:* 1st Place: Sindhura Kundaravalli 2nd Place: Eduardo Reyes 3rd Place: Carine Girgis

# Welcome! IEEE North Jersey Section New Members

Reves Mark - Associate Member Wang Guiling - Associate Member Barlik Mateusz - Graduate Student Member Chen Bo - Graduate Student Member Hall Mary - Graduate Student Member Patel Akata - Graduate Student Member Saikia Isankar - Graduate Student Member Wilson Melody - Graduate Student Member Genovese Andrew - Member Gilmore Molly - Member Khalil Victor - Member Morchel Herman - Member Pope Michael - Member Wild Thomas - Member Ahn Joonhyung - Student Member Alleyne Ken - Student Member Boghdady Matthew - Student Member Boyce Kyron - Student Member Campbell Folawiyo - Student Member Dogum Rudy - Student Member Kashnikow Nick - Student Member Kuny James - Student Member Lau Christopher - Student Member





Llewellyn Helen - Student Member LONCZAKKRZYSZTOF - Student Member Lozada Carlos - Student Member Mancini Corrado - Student Member Marut William - Student Member Mendez David - Student Member Pazmino Christian - Student Member Scott Glendon - Student Member Senyurt Deniz - Student Member Seymour DAndre - Student Member Sheynkman David - Student Member Tanyous Pola - Student Member Back to Calendar of Events:

### Memorial Tribute to Mr. Sever Anghel

The electronics community lost an esteemed member on March 17, when Sever Anghel lost his



battle with a chronic systemic illness. Sever Anghel (1944 – 2012)

To the industry, Sever is best known for his custom integrated microstrip assemblies using soft substrates, and for his ability to coax maximum performance from PIN diode circuits. To those who worked closely with him, he is best known as an engineer with a passion for a challenge and a person with a deep compassion for others. To his former employees, he is known as a boss with exceptional patience and generosity.

Born in Romania, Sever moved with his family to Brooklyn, NY in 1961. He obtained a Bachelor of Electrical Engineering from the City College of New York (1967) and a Master of Science from Rutgers University (1969). He worked at Wheeler Laboratories, ITT, and Engelmann Microwave before founding Anghel Laboratories in the late 1970's. After building his company for 20 years, he sold it to RSI, which later became a part of General Dynamics. After the sale of the company, he joined the staff at Miteq Corporation, where he worked until his passing.

From his first job at Wheeler Laboratories, Sever made an effort to surround himself with people from whom he could learn and develop his skills. He joined the IEEE early in his career and maintained his membership throughout his life, attending symposiums and giving presentations. His approach to custom integrated assemblies came at a time when most of the industry was building assemblies from connectorized microwave components. This approach enabled him to produce smaller, higher performance subsystems at a lower cost. His subsystems found their way into a variety of large commercial and military applications, including MLS, the Patriot Missile, Long Range Radar (GBR), and eventually into his own line of satellite converters. His tri-band converter (C, X, Ku) became the industry standard and was adopted by systems integrators, US military, and NATO. The impact that his integrated assemblies had on the microwave and Satcom industries is irrevocable. The impact that his person had on those who dealt with him are indelible. Wherever integrity and commitment to success are present, the spirit of Sever Anghel cannot be far away.

# How to subscribe to this newsletter if you are not a North Jersey IEEE Member?

To subscribe, send an email to:

listserv@listserv.ieee.org, with the body containing "subscribe northjerseypublic"



listserv@listserv.ieee.org, with the body containing "signoff northjerseypublic"

Additionally, you can join the IEEE North Jersey Section Facebook Fan Page at:

www.facebook.com/pages/IEEE-North-Jersey-Section

Follow us on Twitter at: twitter.com/ieeenorthjersey Or join the LinkedIn IEEE North Jersey Section Group at: www.linkedin.com/groupInvitation?groupID=2068 051



#### **2012 IEEE North Jersey Section Volunteers**

**Executive** Committee Chair - Naresh Chand chandnaresh@gmail.com Vice Chairman 1 - Russell Pepe rcpepe@ieee.org Vice Chairman 2 - Har Dayal dayalhar@gmail.com Secretary - Adriaan van Wijngaarden avw@ieee.org Treasurer - Paul E Ward peward@ieee.org Members at Large 1. Chris Peckham cdp@ieee.org 2. Kalyan Mondal mondal@fdu.edu 3. Goran Djuknic goran.diuknic@baesystems.com Junior Past Chair - Amit Patel a.j.patel@ieee.org Senior Past Chair - Kirit Dixit kdixit@ieee.org

Society Chapters **Aerospace Electronic Systems** Society Chair - Chandra Gupta c.gupta@ieee.org Co-Chair - Naresh Chand chandnaresh@gmail.com Antennas and Propagation Society/ **Microwave Theory and Techniques** Society Chair - Ajay Poddar akpoddar@synergymwave.com Vice-Chair – Edip Niver niver@adm.njit.edu Circuits and Systems Society / **Electron Devices Society** Chair - Durga Misra dmisra@njit.edu **Communications Society** Chair - Nirwan Ansari nirwan.ansari@njit.edu **Computer Society** Chair - Hanna (Hong) Zhao zhao@fdu.edu **Controls Society** Chair - David Haessig davidhaessig@ieee.org **Engineering in Medicine and Biology Society** Chair - Raquel Perez-Castillejos raquelpc@njit.edu

**Industrial Applications Society** Chair - Ken Oexle k.oexle@ieee.org **Instrumentation Measurement** Society Chair - Russel Pepe rcpepe@ieee.org Vice-Chair – Peter J. Pupalaikis peterp@lecroy.com **Photonics Society** Chair – Naresh Chand chandnaresh@gmail.com **Power & Energy Society** Chair - Ron Quade rwquade@ieee.org Signal Processing Society Chair - Yun O. Shi shi@njit.edu Systems, Man, and Cybernetics Society Chair - Mike Liechenstein itsmikesiu@aol.com Vehicular Technology Society Chair - Yu-Dong Yao yyao@stevens.edu

**Technical Councils Technology Management Council** Chair - Tony Almeida almeida@synergymwave.com

**Affinity Groups Consultants Network** Chair - Peter Schutz schutze@compuserve.com GOLD Chair - Dandan Wang wangdan79@hotmail.com Women in Engineering Chair - Zhiwei Mao zmao@fdu.edu **LIFE Members** Chair - Art Greenberg a.h.greenberg@ieee.org

**Committees** Awards/Recognition Chair - Ken Oexle k.oexle@ieee.org **Audit Committee** Chair - Fred Chichester fdchichester@gmail.com

Co-Chair 1 - Donald Hsu yanyou@hotmail.com Co-Chair 2- Kalyan Mondal mondal@fdu.edu Co-Chair 3 - Mengchu Zhou zhou@niit.edu Group coordinator / History Chair - Howard Leach h.leach@ieee.org Membership Development Chair - Mani Iyer miyer108@gmail.com Vice-Chair - Ajay Poddar akpoddar@synergymwave.com MTT/AP Trade Show and Symposium Chair - Kirit Dixit kdixit@ieee.org Vice-Chair – Har Dayal davalhar@gmail.com TPC Co-Chair – George Kennall gkk@lgsinnovations.com TPC Co-Chair – Ajay Poddar akpoddar@synergymwave.com Newsletter Chair - Anisha Apte anisha apte@ieee.org Nominations Chair - Kirit Dixit kdixit@ieee.org PACE Chair - Richard Tax rtax@verizon.net Vice-Chair – Paul E Ward peward@ieee.org **Pre-College Activities** Chair - Har Daval dayalhar@gmail.com Vice-Chair – Hitaish Sharma hitaish@gmail.com **Student Activities** Chair - John C Taylor john.taylor86@live.com Webmaster Chair – Suzanne McIntosh SKranjac@us.ibm.com **Industrial Liaison** Chair-Kirit Dixit kdixit@ieee.org **Intersection activities** Chair- Amit Patel a.j.patel@ieee.org

**MARCH 2012** 

Education



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



**MARCH 2012**