The IEEE Newsletter

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

North Jersey SMC Society:

Fault Detection and Diagnosis in Large Internet Services

On Tuesday, March 15, 2005, the NJ Systems, Man and Cybernetics (SMC) Chapter will host a talk on "Fault Detection and Diagnosis in Large Internet Services." The speaker will be Dr. Geoff (Guofei) Jiang.

About the Talk

While users only see a website of Internet services, such as Google.com and eBay.com, the information system behind the scene is a large, dynamic and distributed system and could consist of thousands of components. Each of these components is already complex enough, and the dynamic interaction between them introduces another significant level of complexity. Further, Internet services are expected to run 24x7x365 and maintain over 99.9% up-time. This complexity, combined with the extreme up-time requirement, sets up a major system management challenge. Detection and diagnosis of faults in such a system are formidable tasks. Recently many laboratories have started research programs to attack the problem of complexity management, such as IBM's autonomic computing initiative. In this talk, Dr. Jiang will discuss recent progress in this emerging area and share some results in applying machine learning in fault detection and diagnosis.

About the Speaker

Dr. Geoff (Guofei) Jiang is a research staff member of NEC Laboratories America at Princeton, NJ. Before Joining NEC Labs, he was a senior research scientist in the Institute for Security Technology Studies at Dartmouth College, NH, and worked on several multi-million dollar projects funded by DARPA, DHS, and ARDA. He got his BS and PhD in ECE from Beijing Institute of Technology and was a Postdoctoral Fellow in Computing Engineering at Dartmouth College. His research focus is on large-scale distributed systems, dependable and secure computing, as well as system and information theory.

All Welcome!

You need not be a member of IEEE to attend, and there is no charge for admission. Light refreshments will be served starting at 6:45 PM.

Time: 7:00 PM (light refreshments at 6:45 PM), Tuesday, March 15, 2005.
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.
Information/RSVP: Dr. Mike Liechenstein, (973) 471-0721, (m.liechenstein@ieee.org).
Please RSVP prior to the presentation since space is limited, as well as for getting instructions for accessing the secured parking deck at NJIT. Also check electronic newsletter for any possible changes in room, etc.

Congratulations To Our New Senior Members!

June '04:	Yves L. Baeyens
Sept. '04:	Andrej Ljolje Carl A. Singer
Nov. '04:	Hock Min Ng
Jan. '05:	Hans-Joachim Gossmann

To get information and an application to advance to Senior Member Grade, send your name and mailing address to:

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IEEE NJ SECTION HOME PAGE
http://web.njit.edu/~ieeenj/
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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@att.net.

NJ Signal Processing Chapter:

Robust Methods for Deformable Shape Inference and Tracking

On March 3, 2005, the IEEE North Jersey Section Signal Processing Society Chapter along with NJIT will host a presentation on "Robust Methods for Deformable Shape Inference and Tracking." The speaker will be Dr. Xiang (Sean) Zhou.

About the Talk

In this talk, Dr. Zhou will introduce the work at Siemens Corporate Research in the areas of robust and database-guided approaches to object/shape inference and tracking, with applications to medical image analysis and computer aided diagnosis support.

The current research efforts span the fields of computer vision, pattern recognition, information retrieval, and machine learning. In particular, Dr. Zhou will discuss in detail a framework for robust shape inference and tracking, exploiting annotated databases, heteroscedastic uncertainties or noise from measurement, system dynamics, and a subspace shape model. The framework is applied for tracking in echocardiograms where the motion estimation errors are heteroscedastic in nature, each heart has a distinct shape, and the relative motions of epicardial and endocardial borders reveal crucial diagnostic features. The proposed method significantly outperforms the existing shape-space-constrained tracking algorithms, with very robust performance even on the most challenging cases.

About the Speaker

Xiang "Sean" Zhou received his PhD degree in electrical engineering from the University of Illinois at Urbana Champaign (UIUC) in 2002. Previously, he received the bachelor's degree in automation and in economics and management (minor) and studied economics for two years in a PhD program at Tsinghua University, China.

Since 2002, he has been with Siemens Corporate Research in Princeton, NJ, where he is now a project manager for the Robust Analysis and Content Retrieval group. His research interests include computer vision, machine learning, object detection, tracking, and recognition, multimedia analysis, representation, understanding, and retrieval. Dr. Zhou is an associated editor for Pattern Analysis and Applications, and was the program co-chair for the 2003 International Conference on Image and Video Retrieval. He is the principle author of the book Exploration of Visual Data (Kluwer 2003). He publishes in IEEE Transactions on Pattern Analysis and Machine Intelligence, IEEE Transactions on Medical Imaging, IEEE Transactions on Circuits and Systems for Video Technology, IEEE Multimedia, Optical Engineering, ACM Multimedia Systems Journal, etc., and leading international research and medical conferences.

Dr. Zhou was the recipient of eight scholarships and awards from Tsinghua University from 1988 to 1995. In 2001, he received the M.E. Van Valkenburg Fellowship Award, an award given to one or two PhD students in the ECE department of UIUC each year "for demonstrated excellence in research in the areas of circuits, systems, or computers."

Time: 1:00 PM (refreshments and pizza available at 12:45 PM), Thursday, March 3, 2005.
Place: New Jersey Institute of Technology (NJIT), Room 202, ECE Center, Newark, NJ. Directions are available at www.njit.edu.
Information: Dr. Yun Shi (973) 596-3501 (shi@njit.edu), Dr. Alfredo Tan (201) 692-2347 (tan@mailbox.fdu.edu), Dr. Hong Man (201) 216-5038 (hman@stevens-tech.edu).

Last Call for Participants, Student Presentation Contest

This is the last call for interested students to partake in the spring 2005 IEEE North Jersey Student Presentation Contest. The registration has been open since the beginning of the year and if you have not registered yet, do it now!

The contest is open to both graduate and undergraduate students with cash prizes of $100/$75/$50 for first/second/third place winners in both categories. Check out the student activities website at http://ewh.ieee.org/r1/north_jersey/sac for links to possible topics, links to last year's winners and a link to the abstract submission and registration form which MUST be filled out if participating in the contest.

Time: Dinner at 5:30 PM, Tuesday, March 8, 2005.
Place: FDU, Room M105, Muscarelle Building, Teaneck, NJ (free Parking available).
Information: Amit Patel, a DOT j DOT patel AT ieee DOT org.

IEEE North Jersey Section Activities
March 2005

Mar. 2 – "NJ Section Meeting", 6:30 PM, "Executive Committee Meeting" - 7:00 PM, ITT, 100 Kingsland Rd, Clifton, NJ. Russell Pepe at rpepe@worldnet.att.net.

Mar. 3 – "Robust Methods for Deformable Shape Inference and Tracking" - NJ Signal Processing Chapter, 1:00 PM (refreshments at 12:45 PM), NJIT, 202 ECE Center, Newark, NJ. Dr. Yun Shi (973) 596-3501 (shi@njit.edu), Dr. Alfredo Tan (201) 692-2347 (tan@fdu.edu), Dr. Hong Man (201) 216-5038 (hman@stevens-tech.edu)..

Mar. 8 – "North Jersey Spring 2005 Student Presentation Contest" - NJ Student Activities Committee, starting with dinner at 5:30 PM, FDU, Room M105, Muscarelle Building, Teaneck, NJ. Amit Patel (a.j.patel@ieee.org).

Mar. 9 – "Dielectrics for Nanoscale CMOS Devices" – EDS/C&S Chapters, 7:00 PM (buffet at 6:15 PM), NJIT, 202 ECE Center, Newark, NJ. Dr. Richard Snyder (973) 492-1207 (RS Microwave) or Dr. Edip Niver (973) 596-3542 (NJIT).

Mar. 9 – "Engineers Meet: An Exciting Discussion and They Don't Want To Leave" - NJ PACE & GOLD, 6:30 – 9:00 PM, Clifton Memorial Library, 292 Piaget Ave, Clifton, NJ. Paul Ward, (973) 790-1625 (PWard1130@aol.com) or Richard F. Tax, (201) 664-6954 (rtax@bellatlantic.net).

Mar. 10 – "Mapping the Internet and Internets" - NJ Communications Chapter, 6:15 PM (refreshments at 6:00 PM), New Jersey Institute of Technology (NJIT), Room 202, ECE Center, Newark, NJ. Dr. Nirwan Ansari (973) 596-3670 (nirwan.ansari@njit.edu) or check http://web.njit.edu/~ieeenj/comm.html for the latest updates.

Mar. 15 – "Fault Detection and Diagnosis in Large Internet Services" - NJ SMC Society, 7:00 PM (light refreshments at 6:45 PM), NJIT, 202 ECE Center, Newark, NJ. Dr. Mike Liechenstein (973) 471-0721 (m.liechenstein@ieee.org).

Mar. 22 – "Architectural Techniques for Interoperability and Coexistence" - NJ Computer Chapter, 7:00 PM (pre-meeting buffet at 6:00 PM), Public Meeting Room, Morris County Library, 30 E. Hanover Ave, Whippany, NJ. Seth Jakel (973) 731-1902, (sgjakel@comcast.net) or Vivek Shaiva (908) 229-6125 (vshaiva@computer.org).

Mar. 30 – "Large-Signal Operation of Microwave AlGaN/GaN Field-Effect Transistors (HFET's)" – EDS/C&S, & MTT-S/AP-S Chapters, 7:00 PM (buffet at 6:15 PM), NJIT, 202 ECE Center, Newark, NJ. Dr. Richard Snyder (973) 492-1207 (RS Microwave) or Dr. Edip Niver (973) 596-3542 (NJIT).

Mar. 31 – "Online Business Development and Management - If you build it, they will come. BULL!" - 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. 6 – "NJ Section Meeting", 6:30 PM, "Executive Committee Meeting" - 7:00 PM, ITT, 100 Kingsland Rd, Clifton, NJ. Russell Pepe at rpepe@worldnet.att.net.

Apr. 14 – "Design and Performance of Microwave and Millimeter-Wave High Efficiency Power Amplifiers" – EDS/C&S, & MTT-S/AP-S Chapters, 7:00 PM (buffet at 6:15 PM), NJIT, 202 ECE Center, Newark, NJ. Dr. Richard Snyder (973) 492-1207 (RS Microwave) or Dr. Edip Niver (973) 596-3542 (NJIT).

Apr. 22-23 – "The Fourteenth Wireless and Optical Communications Conference" - 8:00 AM-5:50 PM, Wyndham Hotel, Newark, NJ. Dr. Hongya Ge, (973) 642-4990 (ge@njit.edu) or see http://www.wocc.org for additional details.

Apr. 28 – "Performance through Resource Management" - 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.

Apr. 29 & May 20 – "Motor And Motor Controls Seminar" - NJ IAS/PES Chapters, 9:00 AM – 3:30 PM, North/Central NJ location to be determined (look for updates at http://web.njit.edu/~ieeenj/NEWSLETTER.html). Ronald Quade, PE, (732) 205-2614 or rwquade@ieee.org.

May 1 – "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 & MTT-S/AP-S Chapters:

Large-Signal Operation of Microwave AlGaN/GaN Field-Effect Transistors (HFET's)

On March 30, 2005, the IEEE NJ Section Electron Devices, Circuits and Systems Chapters together with MTT/S/AP-S and the New Jersey Institute of Technology will host a talk on "Large-Signal Operation of Microwave AlGaN/GaN Field-Effect Transistors (HFET's)." The speaker will be Dr. Robert J. Trew.

About the Talk

Recent developments in wide bandgap semiconductor devices provide the opportunity to design and fabricate microwave transistors that demonstrate performance previously available only from microwave tubes. The most promising electronic device for RF power applications is an HFET fabricated using the AlGaN/GaN heterojunction. These devices can sustain bias voltages significantly in excess of what can be applied to standard semiconductor devices, and AlGaN/GaN HFET's have demonstrated RF output power density on the order of 10-12 W/mm of gate periphery when biased at Vds=40v, and over 30 W/mm when biased at Vds=120v. The AlGaN/GaN HFET's should produce useful performance well into the mm-wave region, and potentially as high as 100 GHz. However, the high voltage operation of these devices introduces a variety of physical effects that currently limit RF performance, linearity, and device reliability. Also, an IMPATT-mode operation of these devices has been discovered under high voltage operation, and this mode has implications for practical utilization of these devices. This presentation will focus upon the RF large-signal operation of these devices, with an emphasis upon the physical effects associated with various charge trapping, surface, and space-charge phenomena that affect the RF performance of these devices. Engineering approaches to controlling these performance limiting effects will be discussed.

About the Speaker

Robert J. Trew received the PhD degree from the University of Michigan in 1975. He is currently the Alton and Mildred Lancaster Professor of Electrical and Computer Engineering and Head of the ECE Department at North Carolina State University, Raleigh. From 1997-2001 he was Director of Research for the US Department of Defense, with management oversight responsibility for the $1.3 billion yearly basic research programs of DoD. Dr. Trew served as Vice-Chair of the US Government interagency committee that planned the US National Nanotechnology Initiative (NNI). Dr. Trew is a Fellow of the IEEE, and was the 2004 President of the Microwave Theory and Techniques Society. He was Editor-in-Chief of the IEEE Transactions on Microwave Theory and Techniques from 1995 to 1997, and from 1999-2002 was founding Co-Editor-in-Chief of the award winning IEEE Microwave Magazine. Dr. Trew has twice been named an IEEE MTT Society Microwave Distinguished Lecturer, and is currently serving his second term in this capacity. Dr. Trew has received numerous awards. He has over 140 publications, 15 book chapters, and has given over 340 technical presentations.

Dr. Trew has seven patents.

All Welcome!

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

Time: 7:00 PM, Wednesday, March 30, 2005. Free buffet will be starting 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) or Dr. Edip Niver (973) 596-3542 (NJIT).

EMS Chair Wanted!

The IEEE North Jersey Section is seeking a Chairperson for the Engineering Management Society. Don't worry-there's not that much to do, and seasoned help is available, along with some new committee members to assist. Anyone interested is heartily encouraged to jump in! Chances are, that any leadership and project planning responsibility you have at work will pale in comparison to the opportunities that await around IEEE.

If you are interested, please contact North Jersey Section Chair Har Dayal at har.dayal@baesystems.com or (973) 633-4618.

NJ Communications Society:

Mapping the Internet and Internets

On March 10, 2005, the IEEE North Jersey Section Communications Society Chapter along with NJIT will host a presentation on "Mapping the Internet and Internets." The speaker will be Bill Cheswick.

About the Talk

Hal Burch and Bill Cheswick started the Internet Mapping Project in the summer of 1998 to try to collect long-term, consistent topological information about the "center" of the Internet. They have recorded the output of hundreds of thousands of traceroutes daily, and have accumulated a database of Internet paths.

In 2000, they spun off from Bell Labs to a company named Lumeta to explore corporate and government intranets. In addition to the traceroute techniques, they use packet spoofing and SNMP queries to detect potential leaks in perimeter defenses. They now have more than 70 clients with large intranets, and can provide some summary information about the state of intranets today.

About the Speaker

Ches has been out and about in the Internet security field since the late 1980s. He is known for his early work in firewalls and proxies at Bell Labs, and for the book he has co-authored with Steve Bellovin and now Avi Rubin.

In summer 2000 Ches helped spin off the Internet cartography work he did at Bell Labs with Hal Burch into a startup, Lumeta Corporation, which explores the extent and perimeter hosts of corporate and government intranets.

He sent his first packets out on the Internet from a Sun workstation at NJIT, where he managed the academic computing department in the computer center.

All Welcome!

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

Time: 6:15 PM (refreshments start at 6:00 PM), Thursday, March 10, 2005.

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

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

NJ Consultants' Network:

Online Business Development and Management "If you build it, they will come" BULL!

On March 31, 2005, the IEEE Consultants' Network of Northern NJ (CNNNJ) will host a talk on "If you build it, they will come. BULL!" The speaker will be Richard A. Feldman.

About the Talk

Whoever told you that if you build a website you'll have a constant traffic flow and you'll generate sales or leads 24 hours a day, 7 days a week lied!

Internet traffic flow and sales requires a careful understanding of how to influence prospects and draw them away from competitive sites, convert your visitors into purchasing clients and entice them into repeat business.

Generating leads and calls for consultants are no different from generating product sales. The ways and means are identical because people are people, buyers are people, clients are people and no matter what needs to be generated, the generator has a vested interest in producing more of it.

About the Speaker

Mr. Richard A. Feldman represents Special Graphics, an agency known for its work in direct mail, consumer product packaging, trade show display, and publicity. A consultant in his own right, Mr. Feldman draws on his current success in online business development for one of his clients, USHC®, an online consumer product marketer, to illustrate how to harness the power of the pay-per-click world and use the internet as a powerful leads and sales generator. Additional information can be found by visiting the agency's website at www.specialgraphics.com.

All Welcome!

Everyone welcome. No registration needed. Free admission.

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.

Time: 7:30 PM, Thursday, March 31, 2005.
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.

NJ Computer Chapter:

Architectural Techniques for Interoperability and Coexistence

On Tuesday, March 22nd, 2005, the IEEE North Jersey Section Computer Chapter will host a presentation titled "Architectural Techniques for Interoperability and Coexistence" by Robert Gezelter.

About the Talk

Ensuring long useful lives for hardware and software systems with the inevitable expansions, upgrades, and previously unconsidered interconnections to other systems is an architectural function. The results can be positive, resulting in long, low-cost system life, or negative, leading to a system with significant limitations.

Often neglected are the architectural techniques and concepts, both in terms of what behaviors are specified, and in terms of what areas are left open. The impact of these areas on the longevity of the system life cycle is often not well appreciated.

We will examine how successful architectures have achieved longevity without major incompatible changes. In the end analysis, success for architecture is measured by its ability to assimilate changes in mission, implementation, interconnection, and scope without the need for incompatible changes. Put succinctly, 20 years into an architecture's life, success is measured by the ability of systems implemented on day one to interoperate unchanged with systems implemented on day 20369.

About the Speaker

Mr. Gezelter is a Contributing Editor for the Computer Security Handbook. He has worked with the Internet and its predecessor, the Arpanet, for much of his career. His experience with the Internet, combined with his extensive experience on security related issues in financial and other areas, resulted in his invitation to author the Internet Security chapter of the Third Edition of The Computer Security Handbook (John Wiley and Sons, Fall 1995) and three Internet-related chapters in the Fourth Edition (John Wiley and Sons, Spring 2002).

He has an extensive background in the design, implementation, and utilization of computer systems. His clientele has spanned the full range of computing activities, from governmental administrative systems to real-time defense and process-control environments. His work has spanned the industry, from mainframes to embedded micro-controllers.

Mr. Gezelter's work has included the internals and utilization of a wide range of architectures and platforms, work with a variety of operating systems, and work in networking. Since 1985, he has presented over 125 public sessions and seminars at conferences and symposia spanning the range from one-hour conference presentations to full day seminars. He has been an invited speaker at many symposia and a featured speaker at meetings sponsored by several professional societies. He has published over 25 articles in a variety of publications and has served as a Contributing Editor for several of these.

A sampling of his presentations can be found at http://www.rlgsc.com/presentations.html, and a selection of his recent articles and columns can be found at http://www.rlgsc.com/publications.html.

Since 1978, Mr. Gezelter has been in private practice emphasizing operating systems, networks, and security. His particular focus has been the use of architectures to improve leverage and efficiency while reducing complexity and its attendant hazards.

Mr. Gezelter received his BA and MS degrees in Computer Science from New York University in 1981, and 1983 respectively.

All Welcome!

You do not have to be a member of the IEEE to attend. Bring your friends and network during the free pre-meeting buffet starting at 6:00 PM.

Time: 7:00 PM, Tuesday, March 22, 2005 (pre-meeting buffet starting at 6:00 PM).
Place: Public Meeting Room, Morris County Library, 30 E. Hanover Ave, Whippany, NJ, (973) 285-6930.
Information: Seth Jakel (973) 731 1902, sgjakel@comcast.net or Vivek Shaiva (908) 229-6125, vshaiva@computer.org.

NJ EDS, C&S Chapters:

Dielectrics for Nano-scale CMOS Devices

On March 9, 2005, the IEEE NJ Section Electron Devices, and Circuits and Systems Chapters together with the New Jersey Institute of Technology will host a talk on "Dielectrics for Nanoscale CMOS Devices." The speaker will be Dr. Durga Misra.

About the Talk

In this talk Dr. Misra will discuss the International Technology Roadmap for Semiconductors (ITRS) forecast that complimentary metal-oxide-semiconductor device with gate length of sub-10 nm will be fabricated by 2016. To achieve this objective both low-k and high-k dielectric materials will be integrated into standard CMOS technologies. Stringent power requirements in the chips dictate replacement of silicon dioxide as it has already reached the direct tunneling regime. At present, advanced gate stacks with high-k dielectrics, therefore, are of intensive research interests. Many different high-k materials have been explored to replace the silicon dioxide as gate dielectrics. In this talk some of the on-going research work on charge trapping in high-k dielectrics such as HfO_2 and $HfSi_xO_y$ will be reviewed.

About the Speaker

Dr. Durga Misra received his MS and PhD degrees both in Electrical Engineering from University of Waterloo, Waterloo, Canada in 1985 and 1988 respectively. He joined the Department of Electrical and Computer Engineering of New Jersey Institute of Technology (NJIT) in September 1988 where currently he is a full professor. His current research focus is nanoscale CMOS devices. He received many research awards from the National Science Foundation and Industry. He has organized many International Symposiums on Solid-State Science and Technology field during the Technical Meetings of the Electrochemical Society and IEEE. He served as the Chairman of North Jersey Section for both 2003 and 2004.

All Welcome!

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

Time: 7:00 PM, Wednesday, March 9, 2005. Free buffet will be starting 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) or Dr. Edip Niver (973) 596-3542 (NJIT).

IEEE-USA Needs Help!

Early this year, Congress will begin debating legislation that could profoundly effect American engineering professionals.

We Need IEEE Members to Come to Washington on March 8th and 9th to Help Us Defend Your Profession!

IEEE engineers face an unprecedented challenge, and an equal opportunity, this year. Done right, pending legislation could strengthen America's long-term competitiveness and prosperity. Done wrong, these proposed reforms could undermine job opportunities and retirement security for many American professionals, including engineers and scientists. It all depends on what Congress decides to do.

Among the many important issues that Congress will debate this year the most important for engineers include proposals to:

- Expand the country's temporary work visa program. Although it will target low-skill workers, this proposal could substantially increase the number of temporary visas available for foreign professionals.
- Partially privatize Social Security and strengthen the nation's defined pension system.
- Change the processing of visas international students need to study in the U.S. Some proposals would make the student admissions process more restrictive. Others will expedite student admissions.
- Make it easier for foreign engineers and scientists to become permanent residents of the U.S.

IEEE-USA will be working aggressively to protect the interests of IEEE members, but we can't do it alone. We need help from individual IEEE members who are concerned about the future of their profession.

On the afternoon of March 8th, 2005 we invite all concerned engineers to meet us on Capitol Hill for an intensive training session on key professional careers issues. Then on March 9th, you will visit with your legislators to discuss the state of engineering in America and practical ways Congress can improve it.

All IEEE members in Regions 1 – 6 are encouraged to participate, including students and retired engineers. No experience is necessary. All you need is a willingness to try to make the country better. IEEE-USA will provide you with background on pending legislation and tips on holding successful meetings with members of Congress. IEEE-USA held a very successful similar event last year. Only two of the participants had ever met a lawmaker before, yet all were able to successful communicate personal concerns and practical recommendations to their legislators.

More information on the 2005 IEEE-USA Careers Fly-In, including how to register, can be found here: www.ieeeusa.org/policy/Careerflyin. Limited support for a few IEEE members from key legislative districts will also be available.

Questions? Contact Vin O'Neil or Russ Harrison at (202) 785-0017 or e-mail Russ at r.t.harrison@ieee.org.

The NJ Section Education Committee Requests Your Feedback

The IEEE North Jersey Section has been helping fellow engineering professionals for the last fifty years. The Education Committee has successfully conducted software and engineering training courses over the last few decades. The Committee is committed to professional development of the members and the instructors for the courses are very qualified and experienced in their respective fields. Classes are arranged on weekday evenings or on Saturdays provided at least fifteen candidates are available. Completion certificates are issued by IEEE Headquarters with CEU credits for the number of training hours.

Due to the slow growth of the economy and several other factors, registration for these courses has diminished over the last few years. I would urge members to send their feedback regarding what courses they would be interested in, the format, location, and day/time, etc., by email to b.chivakula@computer.org.

Regards,
Bhanu Chivukula
Chair, Education Committee
Vice Chair, IEEE North Jersey Section

Conference Rooms Needed!

The North Jersey Section (Education Committee) is looking for conference room facilities to hold their training seminars. The seminars are being held on one weeknight from 6:30 PM to 9:00 PM. In return for providing the conference facility for free, the organization can get free registration up to three members in the course/seminar. Please contact Bhanu Chivukula, Education Committee Chairman, at b.chivakula@computer.org for suggestions or discussions, if interested.

NJ EDS, C&S & MTT-S/AP-S Chapters:

Design and Performance of Microwave and Millimeter-wave High Efficiency Power Amplifiers

On April 14, 2005, the IEEE NJ Section Electron Devices, Circuits and Systems Chapters together with MTT/S/AP-S and the New Jersey Institute of Technology will host a talk on "Design and Performance of Microwave and Millimeter-wave High Efficiency Power Amplifiers." The speaker will be Dr. James J. Komiak.

About the Talk

Device technologies covered include Si BJT, MESFET, HBT, PHEMT, InP, MHEMT, and Wide Bandgap (SiC, GaN). Content includes principles of operation, structures, characteristics, and state of the art benchmarks. Power amplifiers utilizing these device technologies covering L-band through W-band are described including state of the art benchmarks.

About the Speaker

James J. Komiak received a PhD degree in Electrical Engineering from Cornell University in 1978. His PhD research was directed towards a novel broadband matching technique for arbitrary loads using measured data directly, the "Real Frequency Technique".

Dr. Komiak is an Engineering Fellow in the Microwave Electronics Group at BAE Systems. His current activities are in MMIC, module, and sub-system design for EW, communication, and radar system applications. Principally known for work in power, Dr. Komiak has designed over 100 MMICs achieving state of the art results. Prior to consolidation at Sanders and the subsequent sale to BAE Systems, Dr. Komiak was with the Lockheed Martin/Martin Marietta/General Electric Electronics Laboratory.

Dr. Komiak has been active with MTT-S and the IMS TPC with MTT-5/SC-19 High Power Amplifier Components. He was with the IEEE GaAs IC Symposium TPC and ExCom and was Symposium Chairman in 2000. He is also active as an Accreditation Board for Engineering & Technology IEEE-sponsored University Electrical Engineering Program Evaluator. He has 65 publications and 6 patents relating to circuit theory, GaAs MMIC devices and technology, high power amplifiers, solid-state apertures, and RF/microwave design. Dr. Komiak received the 2001 BAE Systems Silver Chairman's Award for Innovation for "Blue Force Locator and Monitor", the 1993 Martin Marietta Jefferson Cup Award for "Outstanding Technical Leadership in Development and Demonstration of High Power and High Efficiency MMIC Amplifiers and T/R Modules for Phased Array Radar", and his work is represented in the MTT Symposium MMIC Historical Exhibit as "World's First Octave Band MMIC with Power Output in Excess of 10 Watts (1989)".

All Welcome!

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

Time: 7:00 PM, Thursday, April 14, 2005. Free buffet will be starting 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) or Dr. Edip Niver (973) 596-3542 (NJIT).

Successful Student Leadership Training Workshop Held

The SLTW for spring 2005 was held by the IEEE North Jersey Section Student Activities Committee on January 29, 2005. The event was hosted by Stevens Institute of Technology in Hoboken, NJ. Students from both Stevens and FDU in Teaneck, NJ were in attendance. A total of 15 participants took part in the workshop and activities of the day. The Stevens branch also had their branch executive committee election and installed their new officers. Here are two pictures of participants and some of the discussion activities during the workshop.

NJ Consultants' Network:

Performance through Resource Management

On April 28, 2005, the IEEE Consultants' Network of Northern NJ (CNNNJ) will host a meeting on "Performance through Resource Management." The speaker will be Donald A. Borcherding.

About the Talk

Rapid and effective product development requires the right combination and balance of engineering talent, project planning and a well thought out development process. However, for organizations that need to share resources across multiple projects and product lines, implementing a resource planning and management process can provide surprising benefits in gaining the competitive edge. This talk will cover five basic process areas (i.e., requirements management, requirements development, supplier management, project planning and validation) to improve product development effectiveness which free up engineering resources and increase the productivity of the organization. These five topics will be presented to show why they are important to both clients and consultants.

About the Speaker

Donald A. Borcherding is the founder of NexSummit LLC. He has a BSEE from the University of Missouri at Rolla and has over 12 years of hands-on experience in Engineering development projects, resource management, project management, process development and continuous process improvements. You can reach Don at dborcherding_1@msn.com or (908) 684-8914.

All Welcome!

Everyone welcome. No registration needed. Free admission.

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.

Time: 7:30 PM, Thursday, April 28, 2005.
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.

NJ Section PACE & GOLD:

Engineers Meet:

An Exciting Discussion and They Don't Want To Leave

On Wednesday, March 9, 2005 the North Jersey Section Professional Activities Committee and Graduates of the Last Decade will host a meeting to discuss the Engineering Profession. February's meeting ended with spirited discussion and it was decided to continue the discussion during the March meeting.

About the Meeting

Our February PACE meeting with representatives from the American Engineering Alliance (www.aeaworld.org/) sparked much interest and introduced the subject of a professional, member-driven organization, uniting engineers of all disciplines. Representatives from the American Engineering Alliance will be with us to answer the question "What can a united organization do for us?"

The consideration of uniting all engineering disciplines in one professional organization is a subject of paramount importance. Do our members want to get involved and support such a project?

Our March meeting will continue along these lines and address the purpose of our meetings, subjects for future meetings, direction of the committee, objectives, plans, action, membership participation and most importantly – our involvement.

Things don't just happen, people make things happen and it is up to us to take part in the process.

The meeting discussion will be moderated by PACE Chair Richard F. Tax and Co-Chair Paul Ward.

All Welcome!

This event is especially of interest to all engineers, students, recent graduates and those looking for a career and support for their profession.

You are encouraged to attend and invite your associates.

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.aeaworld.org/
www.aea.org/chapters/nj/
www.ieeeusa.org
web.njit.edu/~ieeenj/
www.asme.org/sections/northjersey

Time: 6:30 to 9:00 PM, Wednesday, March 9, 2005. Refreshments will be served.

Place: Clifton Memorial Library, 292 Piaget Ave, Clifton, NJ, (973) 772-5500.

Information: Paul Ward, (973) 790-1625 (PWard1130@aol.com) or Richard F. Tax, (201) 664-6954 (rtax@bellatlantic.net).

IEEE-USA Supports Reverse Engineering in Brief Before Eighth Circuit Court of Appeals

Washington (9 February 2005) -- IEEE-USA filed an amicus curiae brief on 24 January in support of reverse engineering for interoperability in the US Court of Appeals for the Eighth Circuit in the case of Blizzard Entertainment v. Internet Gateway (No. 04-3654).

IEEE-USA's "friend-of-the-court" brief seeks reversal of a September 2004 Federal District Court decision in favor of Blizzard, a computer game company. The Court basically ruled that by opening the shrink wrap of a software package, or clicking on a button during installation, the end user gives up fair use rights, including reverse engineering, granted under Section 107 of the Copyright Act.

Reverse engineering is a common and recognized practice, particularly in computer software, and is extremely important to technological advancement. IEEE-USA defines reverse engineering as the discovery by engineering techniques of the underlying ideas and principles that govern how a machine, computer program or other technological device works.

"Ultimately, the greatest benefits from reverse engineering are reaped by the public at large," IEEE-USA's brief said. "The positive exploitation of ideas expressed in copyrighted works ? over the past two decades is readily apparent: advanced, competitive computer software industries have fueled the explosive and enlightening development of the Internet as well as many technology-based modern products."

According to IEEE-USA, by exploiting shrink-wrap and click-wrap agreements, software publishers have attempted to use state-based contract law to trump fair-use rights granted under federal law. The organization believes that such agreements pose a danger to "the nation's intellectual property system" and will chill innovation.

IEEE-USA Seeks to Prevent Copyright Infringement, Preserve Technological Innovation in Electronic File Sharing: Amicus Brief Filed in US Supreme Court

Washington (24 January 2005) -- In a friend-of-the-court filing today with the US Supreme Court, IEEE-USA proposed an approach to prevent copyright infringement while preserving technological innovation.

"A careful balance must be struck between copyright incentives for authors to create works of authorship and the right of the public to benefit from technical means to reproduce and distribute those works," IEEE-USA Intellectual Property Committee Vice Chair Andrew Greenberg said.

According to IEEE-USA's brief, a provider of dual-use technology (capable of both infringing and non-infringing use, such as a VCR or a file-sharing system) should not be liable for the infringements of users unless the provider has actively induced the user to infringe.

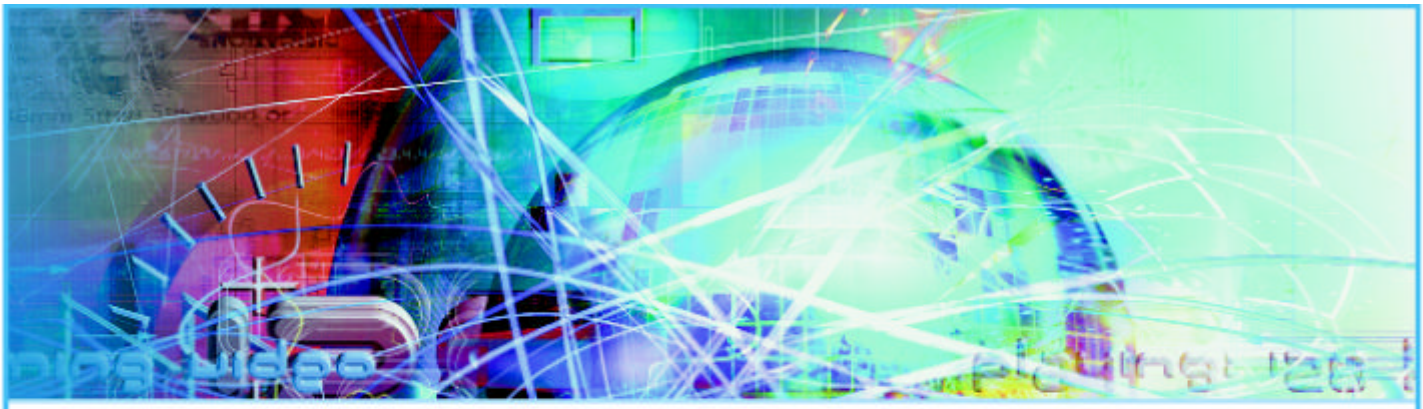
"File-sharing technology serves as the basis for the Internet and should be unrestricted to produce future revolutionary digital products," Greenberg said. "On the other hand, copyright owners must not be left to the mercy of those who set out to knowingly and intentionally induce third parties to infringe."

The case in question, "Metro-Goldwyn-Mayer Studios v. Grokster," involves a lawsuit brought by entertainment companies against Grokster and StreamCast Networks, two companies that offer peer-to-peer file-sharing software. The suit claimed that operators of file-sharing systems should be held responsible when their users copy music, movies and other protected works without permission.

At issue is whether and when restrictions can be placed on file-sharing technologies with both non-infringing and infringing uses.

In August 2004, the Ninth Circuit Court of Appeals ruled that peer-to-peer networks are not liable for copyright infringement because, like the VCRs in the 21-year-old Sony Betamax Supreme Court ruling, they can be used for legitimate "non-infringing" purposes.

On 12 December 2004, the US Supreme Court granted a writ of certiorari to consider this case. Oral arguments will be on 29 March, with a decision expected this spring.



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IEEE

Call For Presentations

WOCC 2005

The Fourteenth Wireless and Optical Communications Conference

April 22-23, 2005, Wyndham Hotel, Newark, New Jersey, USA

Conference Chair
Tien-Pei Lee, Telcordia (Retired)

Conference Organizer
Kevin Lu, Telcordia

Program Chairs
Qi Bi, Lucent
Heather Yu, Panasonic
Deyu Zhou, Opnext

Conference Coordinator
Xiaomei Qian, Amaranth

Treasurer
Emily Hu, Lucent

Publication
Wei Luo, Broadcom
Zhiyuan Yan, Lehigh University

Fund Raising
Russell Hsing, Telcordia
Peng Yin, Thomson
Sydney Zhang, Lucent

Local Arrangement
Mengchu Zhou, NJIT

Registration
Hongya Ge, NJIT

Web Design/Database Manager
Shuang Yu, Lucent

Public Relations
Yi Hsuan, Lucent
Shuang Yu, Lucent
Kang Yueh, Crown Castle

Exhibits
Russell Sun, Lucent

Co-Sponsoring Associations
- The Chinese Institute of Engineers – USA (CIE-USA)
- The Photonics Society of Chinese Americans (PSC)
- The Chinese Association of Science and Technology (CAST)
- The Chinese American Academic and Professional Society (CAAPS)
- The Monte Jade Science and Technology Association (MJSTA)
- IEEE Communications Society North Jersey Chapter

The fourteenth Annual Wireless and Optical Communications Conference (WOCC) will bring together technical experts and business leaders from the North America and Pacific Rim to discuss multimedia, optical, and wireless communications technologies and business opportunities. The theme of WOCC 2005 is **Convergent Communications** over public mobile wireless networks, public fixed broadband wireline networks, and private customer premises networks. The integration of these three networks is the focus of a new next-generation network (NGN) providing *convergent user-centric services* that are no longer associated with the types of network access or content media. Instead, these convergent user-centric services will offer seamless delivery of multimedia applications including voice, data, image, and streaming video independent of any access technologies. The transport layer protocol is converging on Internet Protocol (IP) that propelled the growth of World Wide Web (WWW). The network and service providers will need to deploy standard-compliant converged networks and offer these new value-added services to save operational cost and grow their revenue. Convergent Communications can truly be considered as the enabler for the next phase of growth for the telecommunication industry.

Presentations are solicited in areas of multimedia, wireless, and optical communications in one of the following (but not exclusive) forms:

- Reports of new technological and scientific findings and results
- Reviews, tutorials and technology surveys
- New service operational experiences
- Field trial and new technology/application deployment results
- Economic studies and analysis
- Business proposals and presentations

Submission Deadline: February 15, 2005

Authors will be notified by **March 1, 2005** about the acceptance of their presentation.

Format: Include both abstract and speaker's biography on one 8.5"x11" page with 1" margins and the font size larger than 10. Also include the title of presentation, author names, affiliations, and e-mail addresses.

Submit the abstract/bio in Microsoft Word to one of the program chairs:

Dr. Qi Bi, Wireless Program Chair, qbi@lucent.com
Dr. Heather Yu, Multimedia Program Chair, heathery@ieee.org
Dr. Deyu Zhou, Optical Program Chair, dzhou@opnext.com

For student poster presentation, contact Prof. Hongya Ge, ge@njit.edu
Please refer to http://www.wocc.org/ for additional information.

IEEE AWARDS RECEPTION

North Jersey Section
May 1, 2005
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 1, 2005** 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 20, 2005. 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 20, 2005.** 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

Motor And Motor Controls Seminar

The PES and IAS Chapters will sponsor a two-part seminar covering Motor and Motor Controls. The sessions will be held on two Fridays, April 29 and May 20 at a location to be determined in North/Central Jersey (look for updates at http://web.njit.edu/~ieeenj/NEWSLETTER.html).

The seminar will cover the design and application, protection and control of three-phase motors.

Topics

Day 1

- ✓ Operating conditions, insulation, voltage unbalance
- ✓ Three phase motor theory
- ✓ Protection (fuses, breakers, MCP, overloads)
- ✓ NEMA Premium Efficiency motors

Day 2

- ✓ Solid State Starting
- ✓ Speed control, harmonics, inverter-grade motors
- ✓ Testing, maintenance and repair

About the Instructor

The instructor will be John Hyfantis, President of Energistics LLC. Prior to forming Energistics in 1978, John's responsibilities included engineering and management positions with Electronic Associates, RCA-Astro, Dow Jones & Co., and Johnson & Johnson. John has conducted this course previously for PSE&G, Conectiv, NYSERDA, Northeast Utilities, Hoffmann-La Roche and Schering-Plough.

Mr. Hyfantis is past President and Chairman of the Board of Trustees of the Energy Expo Inc. He is also a charter member and twice past president of the New Jersey Association of Energy Engineers.

His educational credits are a BS degree in Electrical Engineering from Lafayette College, 1960, and a Masters Degree in Management from New York University, 1970. He is a Certified Energy Manager, and is a registered Professional Engineer in New Jersey, New York, Connecticut and Pennsylvania.

The registration fee for this two-part seminar prior to April 15th will be $175 for non-IEEE members, $125 for IEEE Members, $100 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 received after April 15th 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 $15 will be required for processing. A total of 1.2 CEUs will be offered. Please indicate if desired below..

Time: 9:00 AM to 3:30 PM with lunch provided at noon, Friday, April 29, 2005 & Friday, May 20, 2005.
Place: North/Central NJ location to be determined (look for updates at http://web.njit.edu/~ieeenj/NEWSLETTER.html).
Directions: To follow.
Information: Ronald W. Quade, PE, (732) 205-2614 or rwquade@ieee.org.

Registration: Motor Seminar 4/29/2005 & 5/20/2005

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 $15 _____No
If CEUs are chosen, please include a $15 processing fee

Payment Enclosed $_____ Add $25 late registration after April 15th
Make checks payable to North Jersey Section IEEE