



The IEEE

Newsletter

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

NJ Computer and IAS Chapters:

E-Commerce Driving Business Models and Supply Chain Management

On October 19, 2000, the Computer and Industrial Application Chapters will sponsor a program on the impact E-Commerce is creating in developing new business models for electronics manufacturing and supply chain management.

About the Talk

The Big 3 automakers are taking equity stakes in E-Commerce companies. SAP has stumbled without E-Commerce modules. Steel is sold in bulk to heavy industries on the Internet.

What is happening to the present, time tested ways of purchasing, manufacturing, and servicing customers? What does the future hold for manufacturing and supply chain management on the Internet? How are Internet-enabled collaborative environments changing the relationships between various departments, suppliers and customers? How will this impact time to market, quality, and costs? How will this affect manufacturing outsourcing?

The session will show how E-Commerce is changing business models for electronics manufacturing and supply chain management and how it will change your industry, company, and job!

About the Speaker

Michael Chester is Vice President of interEMS.com, a B2B E-Commerce company. Mr. Chester has helped companies ranging from startups to Fortune 500 companies develop strategic plans, business development, E-Commerce and outsourcing strategies.

Time: 7:00PM, Thursday, October 19, 2000.

Location: Dialogic Inc., 1515 Route 10 (East bound from Route 202), Parsippany, NJ. Please park and enter from the front of building.

Information: Ken Oexle (973) 386-1156.

NJ Signal Processing Chapter:

Video Indexing Using MPEG-7 Motion and Color Feature Extraction in the Compressed Domain

On Wednesday, November 8, 2000, the IEEE North Jersey Section Signal Processing Society Chapter will host a presentation on "Video Indexing Using MPEG-7 Motion and Color Feature Extraction in the Compressed Domain." The speaker will be Dr. Ajay Divakaran.

About the Talk

MPEG-7 or "Multimedia Content Description Interface" is a recently proposed standard that will enable content based browsing of multimedia databases much as text is browsed on the world wide web today. First, we present the MPEG-7 motion activity descriptor, our invention, and its applications. The descriptor can be extracted in the compressed domain and is compact, hence is easy to extract and match. It captures the gross motion characteristics of a video segment in a compact form. It enables effective indexing of video. Second, we describe an indexing technique that combines the motion activity descriptor with a color histogram extracted in the compressed domain. Note that color features present a feasible complementary avenue for indexing in the compressed domain. We are able to achieve a significant speed up in matching over using color alone with our combination of features. Finally, we will demonstrate video indexing using our combination of color and motion features, as well as with motion activity alone.

About the Speaker

Ajay Divakaran received a BE (with Hons.) degree in Electronics and Communication Engineering from the University of Jodhpur, Jodhpur, India, in 1985, along with MS and PhD degrees from Rensselaer Polytechnic Institute, Troy, NY in 1988 and 1993 respectively.

He was an Assistant Professor with the Department of Electronics and Communications Engineering, University of Jodhpur, Jodhpur, India from September 1985 to May 1986. He was a Research Associate at the Department of Electrical Communication Engineering, Indian Institute of Science, Bangalore, India from September 1994 to February 1995. He was a Scientist with Iterated Systems Inc., Atlanta, GA from February 1995 to January 1998. Since January 1998, he has been a Principal Member of Technical Staff at the Mitsubishi Electric Research Laboratory, Murray Hill, NJ. His research interests include data compression and transmission with current emphasis on video compression and indexing. He has been an active contributor to the MPEG-7 video standard.

All Welcome!

You do not have to be an IEEE member to attend. Light refreshments will be served at 4:45 PM.

Time: 5:00 - 6:00 PM, Wednesday, November 8, 2000.

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

Information: Dr. Yun-Qing Shi, (973) 596-3501, shi@njit.edu.

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IEEE NJ SECTION HOME PAGE

<http://www-ec.njit.edu/~ieeenj/>

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NEWSLETTER.html

REPORT ADDRESS CHANGES TO:

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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 Wayne Owens at (201) 767-3400, ext. 226, wowens@crestron.com.

Student Leadership Training Workshop for Fall 2000.

Attention all returning students! Ready to kickstart your student branches? Were you elected as a student branch officer and don't know what to do? Need help in running your branch? Well the student leadership workshop is for you!

This year's student leadership workshop is being held at the New Jersey Institute of Technology (NJIT) on Saturday, October 7th, 2000. The guest speaker will be Gerald Karam and the agenda, room location, directions, and registration form can be found at the North Jersey Section Student Activities website:

http://ewh.ieee.org/r1/north_jersey/sac

This announcement is to inform interested students of an opportunity to have their branch leaders trained in the operations and responsibilities of an IEEE student branch. What better way to start the year off on the right foot and get a head start on student activities.

All current student branch officers or new incoming officers are invited to attend along with their branch counselors. What do you have to do to attend? Just register at the website above with the contact information and number of students. You can join the North Jersey SAC mailing list while you are there. Any questions/suggestions? Email Amit Patel a.j.patel@ieee.org or call 973-284-2708. (PRE-REGISTER NOW!)

But that's not all! The Professional Skills Development Workshop is coming up too. This annual workshop will be held in early November at Stevens Institute of Technology in Hoboken, NJ.

If you don't already know, this workshop is to provide students an opportunity to get professional skills education that is not available in an academic environment. Comparable to last year's workshop, the agenda will include topics emphasizing softer skills that engineers need to succeed in today's working world. Previous topics included career planning and management, overcoming fears, and public communication skills.

The Fall 2000 program will include new professional topics and new speakers. The focus will be on critical topics such as practical engineering experience, presentation skills, and many others. Remember, this workshop is open to all interested engineering students that want to learn such professional skills and have an edge before they goto work.

Details and pre-registration will be on the web soon. Stay tuned for more information at the North Jersey SAC website or contact Amit Patel.

NJ Consultants' Network:

Tax Issues for Technical Experts

On Thursday, October 26, 2000, the IEEE Consultants' Network of Northern NJ (CNNNJ) will present a talk "Tax Issues for Technical Experts", by Jack F. Meola, CPA, Amper, Politziner & Mattia, Flemington, NJ.

About the Talk

Mr. Meola will review the latest developments affecting engineering consultants, including:

- The current IRS position related to Section 1706 and how it effects the consulting professional.
- The tax considerations related to the technology professional who is looking for a successful exit strategy from their business in the most tax efficient manner.
- Numerous tax issues related to the consulting professional, including the taxation of the internet that are being considered. If time allows we will discuss the possible impact of these potential developments.

About the Speaker

Jack Meola is both an attorney and a certified public accountant with an in-depth knowledge of the contentious IRS Rule 1706 and how it affects a consultant's business. A tax partner with the firm of Amper, Politziner & Mattia of Flemington, NJ, Mr. Meola has 20 years experience in public accounting, is a contributing author to Year-End Tax Planning, is president of the Tax Committee of the Middlesex County Bar Association, and is a member of Partnership Tax Committee of the NJ State Bar Association and the Federal Committee of the American Bar Association. He holds a J.D. from Seton Hall Law School and an L.L.M. in Taxation from Villanova Law School.

About the Consultants' Network

The IEEE Consultants' Network of Northern NJ was founded in 1992 to encourage and promote the use of independent technical consultants by business and industry.

All Welcome!

You do not have to be a member of the IEEE or of the Consultants' Network to attend. Networking after the meeting is encouraged. There is no charge for admission.

Time: 7:30 PM, Thursday, October 26, 2000.

Place: KDI Triangle, 60 S. Jefferson Road, Whippany, NJ.

Information: For directions and up-to-date meeting status, call Robert Walker (973) 728-4500 or visit our website at www.TechnologyOnTap.org.

North Jersey Section Activities

October 2000

Oct. 4—"NJ Section Executive Committee Meeting" – 7:00 PM, ITT, 100 Kingsland Road, Clifton, NJ. Wayne Owens at (201) 767-3400 ext. 226 or wowens@crestron.com.

Oct. 7—"Student Leadership Training Workshop" – 9:30 AM to 4:00 PM, ECE Conference Room - Microelectronics Building, NJIT, Newark, NJ. Amit Patel at a.j.patel@ieee.org or (973) 284-2708.

Oct. 17—"Adaptive Filtering of Gravitational Wave Signals " - NJ Section Systems, Man and Cybernetics Society, 7:30 PM, Muscarelle Building, Fairleigh Dickinson University, Teaneck Campus, NJ. Dr. Mike Liechenstein (973) 471-0721 (m.liechenstein@ieee.org) or Mel Lewis (201) 692-2348 (m.lewis@ieee.org).

Oct. 19—"E-Commerce Driving Business Models and Supply Chain Management " - NJ Computer and IAS , 7:00 PM, Dialogic Inc, 1515 Route 10 East, Parsippany, NJ. Ken Oexle (973) 386-1156.

Oct. 19—"Present and Future Filter Design Philosophy: Paradigm Shift In Progress " - EDS/C&S and MTT/AP Chapters, 7:00 PM (free pre-meeting buffet at 6:15 PM), NJIT, Room 202, ECE Building, Newark, NJ. Kirit Dixit (201) 445-2981, Willie Schmidt (973) 492-0371 or Dr. Edip Niver (973) 596-3542 (NJIT).

Oct. 26—"The Conversion of Solar Energy to Electricity – An Evaluation of the Technology" – NJ IAS/PES Chapters, 6:00 PM, NJIT, 202 ECE Center, Newark, NJ. Dr. Walid Hubbi (973) 596-3518 or Ken Oexle (973) 386-1156.

Oct. 26—"Tax Issues for Technical Experts " – NJ Consultants' Network, 7:30 PM, KDI Triangle, 60 S. Jefferson Road, Whippany, NJ. Robert Walker (973) 728-4500 or www.TechnologyOnTap.org.

Upcoming Meetings

Nov. 1—"NJ Section Executive Committee Meeting" – 7:00 PM, ITT, 100 Kingsland Road, Clifton, NJ. Wayne Owens at (201) 767-3400 ext. 226 or wowens@crestron.com.

Nov. 8—"Video Indexing using MPEG-7 Motion and Color Feature Extraction in the Compressed Domain " - NJ Signal Processing Chapter, 5:00 PM (refreshments at 4:45 PM), NJIT, 202 ECE Center, Newark, NJ. Dr. Yun-Qing Shi (973) 596-3501 (NJIT).

Members and Non-Members Welcome

PLEASE POST

No. Jersey SMC Society:
**Adaptive Filtering of
Gravitational Wave
Signals**

On Tuesday, October 17th, the IEEE North Jersey Systems, Man and Cybernetics Society Chapter will host a semi-technical overview by Mel Lewis of the need for and the use of adaptive filtering in the search for gravitational waves.

About the Talk

After a brief overview of gravitational waves themselves and the apparatus being setup to capture them, there will be a discussion on the traditional signal extraction methods for both non-gravitational wave and gravitational wave applications. Application of adaptive filtering for enhanced signal extraction from noise will be described in some detail, with special attention to false alarm reduction, signal recognition, strengths and weaknesses of alternative approaches, as well as processor requirements.

About the Speaker

Mr. Lewis until recently was an electronics engineer in industry with 36 years experience designing microwave circuits and systems, mostly at Lockheed Martin. Much of that work has been on receivers, RF components, and complex instrumentation. He holds one patent (on frequency memory), and has published two articles on the search for gravitational waves. He has also published several technical articles on other electronics topics. He has a BSEE from Fairleigh Dickinson University, Teaneck, NJ (1961) and an MSEE from Columbia University (1963). He currently serves as a full-time lecturer at Fairleigh Dickinson University where he teaches fields and waves and several other undergraduate engineering courses. Mr. Lewis is a senior member of the IEEE, a member of the IEEE Vehicular Technology Society board of governors, a member of the IEEE Antennas and Propagation Society, a member of the American Physical Society (notably the Topical Group on Gravitation), the LIGO Research Community (LRC), and the American Assoc. for the Advancement of Science.

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 7:15 P.M.).

Time: 7:30 PM, Tuesday, October 17, 2000.

Place: Muscarelle Hall, Fairleigh Dickinson University, Teaneck, NJ (Parking just off Route 4 and River Road).

Information: Dr. Mike Liechenstein (973) 471-0721 (m.liechenstein@ieee.org) or Mel Lewis (201) 692-2348 (m.lewis@ieee.org).

NJ PES/IAS:

**The Conversion of Solar
Energy to Electricity -
An Evaluation of the
Technology**

On October 26, 2000, the IEEE North Jersey Chapters of IAS/PES along with the power systems group at NJIT will host a talk on "The Conversion of Solar Energy to Electricity - An Evaluation of the Technology." The speaker will be Mr. Harry Roman.

About the Talk

The engineering challenges of converting sunlight directly into electricity will be discussed. Some representative samples of the technology will be shown for discussion.

The following major topical areas will be covered:

- The nature of sunlight and its useful application
- The history of photovoltaic technology and PSE&G's involvement
- The basic photovoltaic system and review of state-of-the-art technology
- System performance and design concerns
- Cost projections and future technological changes
- Comparisons with other solar technologies

About the Speaker

Harry T. Roman is a Senior Technology Consultant for PSE&G with over 30 years of experience in solving engineering and research problems in all aspects of electric power production and delivery. He is PSE&G's technical expert on solar and photovoltaic technology applications, having followed the development of this technology and managed company demonstration installations for 25 years.

Mr. Roman has a BS degree in Electrical Engineering from The Newark College of Engineering/NJIT (1970); and an MS degree in Environmental Engineering (1974) from the same institution. He has published over 260 technical papers, articles, several books and book chapters, as well as numerous lectures and presentations. Mr. Roman is also an inventor, having received 8 US patents. As a member of the adjunct graduate faculty at the New Jersey Institute of Technology (NJIT), he has for 8 years taught courses in managing R&D projects and new product development.

Time: 6:00 PM Thursday October 26, 2000. Pre-meeting refreshments will be served.

Place: NJIT, Room 202, ECE Building, Newark, NJ. Directions are available at www.njit.edu.

Information: Dr. Walid Hubbi (973) 596 3518 or Ken Oexle (973) 386-1156.

**The VT Conference
Committee Wants You!!
Looking for Volunteers,
Sponsors, Exhibitors**

The IEEE North Jersey Section is hosting the Fall 2001 Vehicular Technology Conference in Atlantic City, NJ from October 6-11, 2001. And now's your chance to get involved.

Have you ever wondered how a conference comes together? How speakers, tutorials, meals, and many other activities are smoothly integrated? How to produce a powerful technical program of international caliber? How to advertise your company's name on the coffee cups during the lunches and breaks?

Then this is the deal for you. The conference committee is issuing an open call for volunteers to help man its sub-committees. Currently the following have some openings: local arrangements, banquet, publicity, publications, registration, special/social events, transportation, and many others.

But it doesn't stop there. There are special discounts for student volunteers and sponsoring companies. What better way for your organization to get its name out to hundreds of people from worldwide in the mobile communications arena than by becoming Platinum, Gold, or Silver sponsors? You can even tailor your sponsorship to meet your advertising needs. This includes getting tables or floor space to exhibit YOUR products and services to those people with the purchasing power or an all electronic advertisement on the website.

Even students can get involved. There is a significant student admissions discount and does not require any society affiliations. We are also looking for students to man the registration desk and take on other activities. Universities are also welcome to become sponsors.

How can you find out more and get involved? Contact conference chair Art Greenberg at a.h.greenberg@ieee.org or (973) 492-1207, and Industry Liaison/Exhibits chair Stephen Wilkowski at swilkowski@lucent.com or (973) 386-6487. Check out the website at <http://www.fallvtc2001.com/index.htm>.

Present and Future

Filter Design

Philosophy: Paradigm Shift In Progress

The IEEE NJ Section Electron Devices, Circuits and Systems, and MTT/S/AP-S Chapters along with NJIT will host a talk October 19, 2000 on "Present and Future Filter Design Philosophy: Paradigm Shift In Progress." The speaker will be Dr. Richard V. Snyder.

About the Talk

The design of passive filter networks has traditionally been a process in which approximations are made to a desired transfer function using reactive and resistive elements exhibiting the same frequency-dependent functional form. Lumped elements display a reactive variation linearly dependent upon ω . The imittance of single-mode distributed elements depends upon various simple transcendental functions of ω , while the behavior of elements based on sections of evanescent guide depend on more complicated transcendental functions. The various functional forms are chosen to accurately represent the "natural" (actual) behavior of the particular elements, as a function of frequency. Over the years, a variety of synthesis techniques have been developed that allow for extracting sets of such elements from the transmission and reflection functions associated with approximating the desired transfer function when terminated with a specified source and load impedance. Because the rules for disassociating a polynomial by removal of a portion dictate that the remainder polynomial retain the same functional form, it is difficult to perform exact synthesis, using elements with two or more forms of frequency variation, unless non-reciprocal (gyrator or active) elements are included to provide isolation between extracted elements. We know that physically it is not difficult to combine lumped, distributed and evanescent elements in the same network. Optimization allows for insertion of elements with different frequency dependencies, but exact synthesis is generally not possible. In the conventional case, single form synthesis results in a network that requires particular elements (i.e. inductors, capacitors, lengths of line, sections of dispersive waveguide, resistors, mutual couplings, posts, irises, etc.). What is the exact equivalent representation for each of these required elements? For example, what is the equivalent representation of an "inductive" post?

The answer is not simple, as the correct representation depends on the structure in which the post is contained, the frequency range, the ratio of diameter to length, and perhaps properties of the materials used for implementation. For accuracy and use in linear circuit simulators, multi-mode equivalent circuits are frequently used to represent even the simplest of elements. As an alternative, it is possible to use E-M analysis software to compute the actual response of the isolated and coupled elements over a particular range of frequencies, assuming it is possible to geometrically represent the particular element in some regular manner. Using this technique in combination with genetic algorithms or more traditional optimization methods, one can readily, albeit slowly, combine elements with the various functional dependencies.

Network topologies have evolved and it is possible to synthesize rather optimum non-minimum phase ("quasi-elliptic") filters, accurately representing the irises or lumped elements used in cross coupling as small subnetworks embedded into the whole. Again, the synthesis limitations (lumped elements, distributed periodic, non-periodic (evanescent) and even active or gyrator types in the same network) can be overcome with E-M analysis, parameter extraction and optimization. As filter networks become physically smaller, the interactions between the elements and the effect of these interactions upon the equivalent circuits is increasingly important. The grand challenge facing designers today is multivariable synthesis followed by implementation of networks that incorporate accurately characterized elements and interfaces. An example of such success will be filters built as coupled quantum wells, using the cross coupled topology, fabricated using nanotechnology and implemented with a minimum of labor. In this paper, we will review the status of multivariable synthesis, parameter extraction of element equivalent circuits and the use of E-M simulation in conjunction with optimization to implement filters. Perhaps 10 years from now, with 3 GHz machines on every desk, we will be able to design complicated filters using direct solutions of Maxwell's equations, in just a few minutes. Is this where we are going?

About the Speaker

Dr. Richard V. Snyder is the President and founder of RS Microwave Company Inc., a well-known 19 year old manufacturer of RF and Microwave filters. He is the author of over 50 papers on the subject of filters and couplers, as well as holder of 13 patents. He received his BS, MS and PhD degrees from Loyola-Marymount, USC and PINY. His current

research areas include electromagnetic simulation as applied to filters and networks, dielectric resonators, and active filter networks.

Dr. Snyder served the IEEE as North Jersey Section Chairman and as a 14 year Chapter Chairman for the MTT and AP Societies. He has twice received the Region 1 award. In January 1997 Dr. Snyder was named a Fellow of the IEEE. The citation states: "For contributions to the development of high power miniature stopband filters and extremely wideband bandpass filters for microwave applications." In January 2000, he was selected as a recipient of the IEEE Millennium Medal.

A reviewer for the IEEE Transactions on Microwave Theory and Techniques, the IEEE Microwave and Guided Wave Letters, Microwave Journal, and other IEEE and MTT publications, Dr. Snyder teaches filter and network courses as an adjunct professor at the New Jersey Institute of Technology. His professional involvement also includes MTT-ADCOM special assignments and various MTT Chapter lectures on the subject of filters and networks.

Dr. Snyder was recipient of the best paper award at the 1991 MTT-S Symposium. He served as Standards Chairman for the MTT ADCOM. Currently serving as Chairman of MTT-8 (the Microwave Theory and Techniques Society Technical Committee charged with oversight of Filters and Passive Components) and General Chairman of the MTT Symposium to be held in Philadelphia in 2003, Dr. Snyder has also served the North Jersey Section as EDS/C&S Chair, METSAC chairman and as an organizer of Tutorial Sessions for Electro. He previously was a Research Engineer at ITT-Gilfillan, Chief Engineer for Merrimac Industries, Vice-President of FEL where he ran the Microwave Division, and Chief Engineer for Premier Microwave.

All Welcome!

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

Time: 7:00 PM, Thursday, October 19, 2000. Free pre-meeting buffet will be starting at 6:15 PM.

Place: NJIT, Room 202, ECE Building, Newark, NJ. Directions are available at www.njit.edu.

Information: Kirit Dixit (201) 445-2981, Willie Schmidt (973) 492-0371 or Dr Edip Niver (973) 596-3542 (NJIT).

PACE NEWS - by Richard F. Tax

Bob Rivers, a good friend to the engineering community is keeping a file on LAYOFFS OF HIGH TECH WORKERS. Bob asks that you send information on company layoffs to his e-mail address at tecworkers@aol.com, web site is www.technology-employment.com. Thanks Bob for your help. This information will come in handy when fighting Engineer Shortage Propaganda (ESP). Bill Reed, president of the American Engineering Association notes that current Manpower Shortage Propaganda is now being fabricated by a group defined as the IT Cartel or the Information Technologist Cartel. www.itaa.com. This cartel, spearheaded by Harris Miller, its president, consists of corporate members. Some of these same members of Corporate America can be found listed at www.zazona.com as using H1-B workers. Employers have openly asked their employees to train the H1-B workers to replace them.

Here is the IEEE-USA letter by Merrill Buckley, 2000 IEEE-USA

President Re: Pending H-1B Visa Legislation.
May 5, 2000

The Honorable Henry J. Hyde
U.S. House of Representatives
Washington, DC 20515

Re: Pending H-1B Visa Legislation, including H.R. 4227.

Dear Chairman Hyde,

I am writing to express the very serious concerns of the Institute of Electrical and Electronics Engineers – United States of America (IEEE-USA) about pending legislation calling for substantial increases in the numbers of foreign professionals who can be admitted to work "temporarily" in the United States on H-1B guest-worker visas.

Rather than increasing H-1B admissions to 200,000 a year as Representatives Dreier and Lofgren have proposed, or blowing the lid off entirely as Congressmen Smith, Campbell and Goodlate recommend, Congress ought to fix what's really broken -- the nation's permanent employment-based immigration system. Legal permanent residents, not temporary guest-workers, should provide the knowledge and skills needed to meet urgent workforce demands that cannot be met through better education and improved utilization of American citizens.

Upward adjustments in admissions ceilings must be accompanied by commensurate improvements in safeguards for U.S. workers, including citizens, legal permanent residents and foreign nationals who are legally allowed to work in the United States. We strongly recommend that the domestic recruitment and retention attestation requirements that were established for "H-1B dependent" employers in 1998 should apply to all petitioning employers, including educational and not-for-profit organizations.

The minimum salary and English language requirements for instructional personnel in Title II and the anti-fraud provisions in Title III of the New Technology Temporary Worker Relief Act (H.R. 4227) are needed to improve the integrity of the H-1B program and to minimize the potentially adverse effects that substantial increases in admissions will have on educational and employment opportunities for citizens and legal permanent residents.

And because effective program administration, enforcement and Congressional oversight is impossible without the timely availability of accurate statistical information, the new electronic transparency (reporting) requirements for employers and the Secretary of Labor in Section 202 of the bill are critically important and should be retained

when the Judiciary Committee marks up H.R. 4227 later this month.

Sincerely

Merrill W. Buckley, Jr.

2000 IEEE-USA President, The Institute of Electrical and Electronics Engineers - United States of America, 1828 L Street, N.W., Suite 1202, Washington, DC 20036-5104, (202) 785-0017 Fax: (202) 785-0835, E-mail: ieeusa@ieee.org

(Note: Same Letter sent to all members of the House Judiciary Committee)

WEB SITES OF INTEREST: www.osOpinion.com, www.technology-employment.com, www.NumbersUSA.com, www.zazona.com, www.fairus.org, www.itaa.org, www.aea.org, www.americanworker.org, www.dice.com.

"Debunking the Myth of a Desperate Software Labor Shortage" paper, at <http://heather.cs.ucdavis.edu/itaa.html>

Any thoughts, ideas, or suggestions you may have about meetings can be emailed to me at rtax@bellatlantic.net.

We could also use your help getting meeting sites for PACE and other Section meetings. Copying your interests to our Section Chairman, Alan Stolpen, at a.stolpen@ieee.org would also be helpful.

You can also invite your associates to these meetings.

H1-B ABUSES -Foreign workers, engineers, programmers, high tech employees, information technologists working here in the U.S. automatically become members of the U.S. engineering community and should be treated the same as U.S. employees. Companies state the pay for H1-B employees is the same as U.S. employees and that they are imported for their high skill level and not to reduce labor rates. However, some of these employees are considered to be indentured and forced to work excessive hours for the same salary, thus reducing the pay level to below that reported. Abuses such as this should not be tolerated.

For any information related to this you may reach me at the above email address or come to our Section Executive Committee Meeting.



The IEEE-USA's President's Column:
The Importance of Professional Development
Merrill W. Buckley, Jr.

IEEE-USA emphasizes professional development on a regular basis. While many of our members understand the need to develop and refine their non-technical skills, there are others who haven't come to grips with how important those skills really are. I'll use this column to tell you what I've learned about this important subject over the course of my career.

From where I sit, I see that engineers are faced with two conflicting realities. The first reality is the importance of our daily work to society. Engineering is vital to making the world a safe, productive, efficient place to live. The second reality, however, is that engineering as a profession is not held in sufficient esteem. As a result, that means that individual engineers sometimes feel they are under-appreciated.

While well-meaning people -- myself among them from time to time -- debate the reason this is so, a third reality is that engineers and their employers can take steps to correct this situation themselves. Professional development that focuses on sharp communications skills, sound project management, and enhanced interpersonal relationships is a good starting point and will reap benefits for the engineers who choose to expand their repertoire of soft skills.

I have noticed over the years that young engineers repeatedly encounter the same scenario. Armed with a new degree and a set of hopeful expectations, they go to work for a corporation, an engineering firm, a government agency, or enter academia to begin their careers. You can spot the fortunate ones without too much trouble. Perhaps they grew up in homes where one or both parents knew the value of good communications skills and teamwork and passed that knowledge along to their children. Or perhaps the new engineer is a quick study and is working with more senior colleagues who are good mentors.

Some aren't so fortunate, however. They don't begin to suspect how their effectiveness will be impaired because their engineering classes haven't prepared them for bringing a project in on time and budget, managing client relationships, coping with different personalities on their team, or relating well to their management.

IEEE-USA's professional development programs can help. Visit our Web page at www.ieeeusa.org/prodevcon to see the kinds of programs offered and what attendees said about the last Professional Development Conference. In addition, keep yourself apprised of educational opportunities through your Section and Society newsletters.

Plan now to budget for professional development. If you're an employer, consider sending some of your staff -- both junior and senior -- to develop new skills and refine existing ones. And don't forget to explore other avenues for professional development. Your community may provide opportunities in a college or community college, or through adult education courses through the Board of Education. Further, many publications include articles that offer insight into career-enhancing behaviors, including *The Wall Street Journal*, *Fast Company* and *Fortune*. A subscription to one of these, or another business publication, can be an effective first step toward managing your own professional development program.

Finally, we're planning to launch a quarterly publication, *IEEE-USA News & Views*, to go to all U.S. members. In addition to featuring professional-related information, it will focus on non-technical subjects to help improve your career possibilities and your worth in the employment marketplace. Make sure you develop the habit of reading it.

Advance To Senior Member Grade

To become a Senior Member, you need ten years experience. A Bachelors degree counts for three of those years and a Masters and Doctorate each count for one year. You don't have to be an IEEE member for ten years. The dues for Senior Members, Members and Associates are the same. To get information and an application, contact Don Weinstein, Kulite Semiconductor, One Willow Tree Road, Leonia, NJ 07605-2239, (201)461-0900 ext 234 mornings, FAX (201) 461-0990. Please include your mailing address.

IEEE Vehicular Technology Conference

The IEEE Vehicular Technology Society will hold its Fall 2001 Conference on October 6-11, 2001 in Atlantic City. It is one of the major international mobile communications conferences in the world and will be hosted by the North Jersey chapter. Information about the conference is available at www.fallvtc2001.org.

Companies that are interested in sponsorship should contact Steve Wilkowski at swilkowski@lucent.com.

AT&T Wireless Services presents an Engineering Open House on October 26th, 2000 in Paramus, NJ.

(Note: This is a revised date from our original publication)

Please visit our website for exact location, time and driving directions: <http://www.attws.com/jobs>

Hiring managers will be onsite to discuss these current Nationwide openings:

- Network Performance Engineer: Woodbury & Buffalo, NY; Norcross, GA; Beltsville, MD; West Palm Beach, FL;
- Switch Design Engineer: Westwood, MA; Dallas, TX; New York, NY
- RF Design Engineer: Paramus, NJ; Charlotte, NC; Woodbury, NY; Westwood, MA; Beltsville, MD
- RF Engineers: New York, NY; Paramus, NJ; Bensalem, PA; Atlanta, GA; Charlotte, NC
- Switch and Field Technicians: White Plains & New York, NY; Framingham, MA; Pittsburgh & Philadelphia, PA
- And many more.

Please save the date to visit our Open house in Paramus, NJ and we will see you there!

ANNOUNCEMENT AND CALL FOR PAPERS
TORONTO, ONTARIO, CANADA
APRIL 17-19, 2001

The Joint Rail Conference is sponsored by the Land Transportation Division of the Vehicular Technology Society (VTS) of the IEEE, and the Rail Transportation Division of the ASME. Papers are invited for presentation and discussion at the Conference.

This year's conference will feature a special theme:

- **New Technology to Meet the Rail Industry Challenges of the 21st Century.**

Papers in this area are especially appreciated, and may be presented together in a special forum.

All papers of interest are also welcome. Topics can include:

- Rail transportation, high speed passenger rail, heavy rail transit, light rail transit, automated people mover, and magnetic levitated systems.
- AC and DC traction propulsion and control systems, electric power distribution and substations, energy efficiency and management, power conversion.
- Signal and communication systems, automation and microprocessor control, Communications-Based Train Control (CBTC), and EMI/EMC issues.
- Automated train dispatching, data management systems, and operation control centers.
- System and software safety and quality assurance and verification processes.
- Maintenance procedures, monitoring and fault detection, remote diagnostics.
- Computer modeling and simulation of transportation systems.
- Rail-Highway Intersection Warning Systems and related ITS applications.
- New starts and renovation projects.
- Other applications of electrical/electronic and communication technologies in rail transportation.

Authors are requested to submit 200-300 word abstracts in 5 printed copies no later than October 1st, 2000 to:

Frederick R. Childs, Papers Chair
Land Transportation Division, IEEE-VTS
Port Authority Trans-Hudson Corporation (PATH)
One PATH Plaza, JSTC-108
Jersey City, NJ 07306
Tel: 201-216-6270
Fax: 201-216-6576
E-mail: fchilds@panynj.gov

Electronic mail submission preferred. If submitting by mail or fax, please forward a diskette copy of your abstract, preferably in Microsoft Word 97[®] format.

Notification of paper acceptance will be made by November 15, 2000. Selected papers must be submitted in acceptable format, as instructed, no later than January 15, 2001 for publication in the Conference Proceedings.